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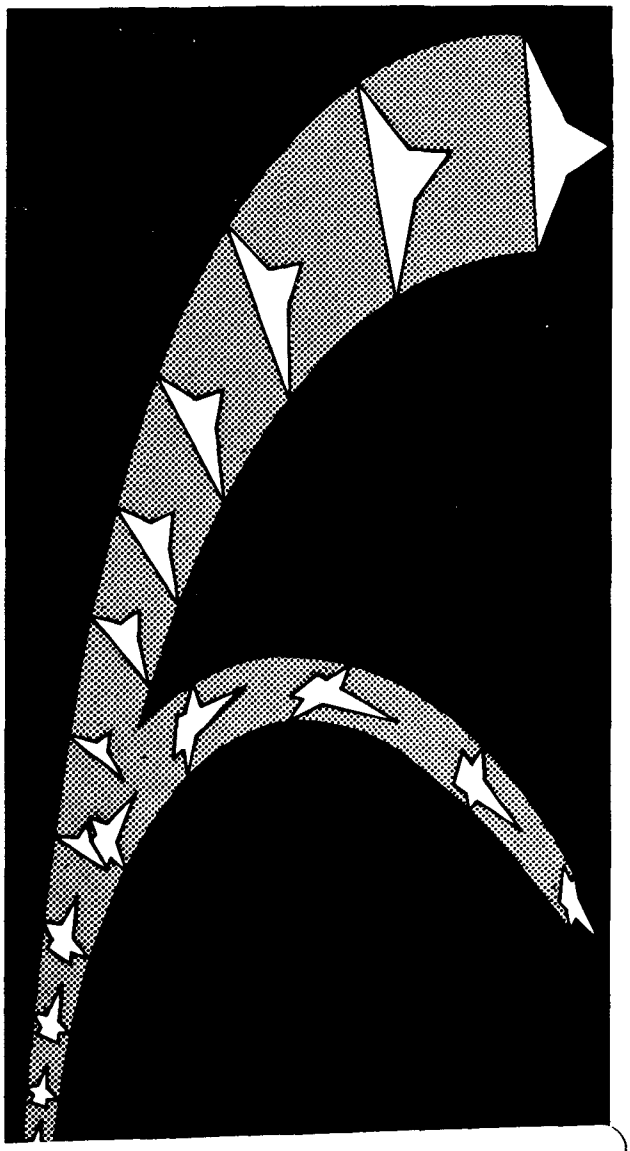

—SPACE SHUTTLE—

STABILITY AND CONTROL EFFECTIVENESS OF THE MDAC PARAMETRIC DELTA CANARD BOOSTER AT MACH 0.38

Volume IV
SURFACE EFFECTIVENESS, MODEL BUILDUP , AND DIRECTIONAL STABILITY AT HIGH ANGLES OF ATTACK

by

D. Bradley, LMSC/HREC

R. Buchholtz, LMSC/HREC

NSRDC 7X10 - FOOT
TRANSONIC WIND TUNNEL

FACILITY FORM 602

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AEROTHERMODYNAMIC
DATA MANAGEMENT SYSTEM

CONTRACT NAS8-4016
MARSHALL SPACE FLIGHT CENTER

SPACE DIVISION CHRYSLER CORPORATION

NAVY SHIP RESEARCH
AND
DEVELOPMENT CENTER

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SADSAC/SPACE SHUTTLE

WIND TUNNEL TEST DATA REPORT

CONFIGURATION: Space Shuttle Parametric Delta Canard Booster .015 Scale

TEST PURPOSE: Investigation of Stability and Control Effectiveness at Mach Number 0.38

TEST FACILITY: NSRDC 7 x 10-Foot Transonic Wind Tunnel

TESTING AGENCY: LMSC/HREC for MSFC

TEST NO. & DATE: NSRDC 3110; March, 1971

FACILITY COORDINATOR: Dale Chadock - NSRDC

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ABSTRACT

A 0.015 scale model of a modified version of the MDAC Space Shuttle Booster was tested in the Naval Ship Research and Development Center 7 x 10 Foot Transonic Wind Tunnel during March 1971 (Test Number NSRDC 3110) to obtain force, static stability, and control effectiveness data. This test was conducted by Lockheed's Huntsville Research and Engineering Center for the Aero-Astrodynamic Laboratory of the George C. Marshall Space Flight Center. Data were obtained for a cruise Mach Number of 0.38, altitude of 10,000 ft (q = 165 psf), and Reynolds Number per foot of approximately 2×10^6. The model was tested through an angle of attack range of -4° to 15° at zero degree angle of sideslip, and at an angle of sideslip range of -6° to 6° at fixed angles of attack of 0°, 6°, and 15°. Other test variables were elevon deflections, canard deflections, aileron deflections, rudder deflections, wing dihedral angle, canard incidence angle, wing incidence angle, canard position, wing position, wing and canard size, canard control flap size and dorsal fin size.

Plotted data for this test will be published under one data report number (DMS-DR-1139) with four volumes as follows:

I.	Canard Parametric Variations	Data plot pages 1-525
II.	Wing Parametric Variations - Size and Location	Data plot pages 526-1309
III.	Wing Parametric Variations - Incidence and Dihedral	Data plot pages 1310-1804
IV.	Surface Effectiveness, Model Buildup and Directional Stability at High Angles of Attack	Data plot pages 1805-2207

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SUMMARY

A 0.015 scale model of a modified version of the MDAC Space Shuttle Booster was tested in the Naval Ship Research and Development Center 7 x 10 Foot Transonic Wind Tunnel during March 1971 (Test Number NSRDC 3110) to obtain force, static stability, and control effectiveness data. This test was conducted by Lockheed's Huntsville Research and Engineering Center for the Aero-Astrodynamic Laboratory of the George C. Marshall Space Flight Center. Data were obtained for a cruise Mach Number of 0.38, altitude of 10,000 ft (q = 165 psf), and Reynolds Number per foot of approximately 2×10^6. The model was tested through an angle of attack range of -4° to 15° at zero degree angle of sideslip, and at an angle of sideslip range of -6° to 6° at fixed angles of attack of 0°, 6°, and 15°. Other test variables were elevon deflections, canard deflections, aileron deflections, rudder deflections, wing dihedral angle, canard incidence angle, wing incidence angle, canard position, wing position, wing and canard size, canard control flap size, and dorsal fin size.

Plotted data for this test will be published under one data report number (DMS-DR-1139) with four volumes as follows:

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II.	Wing Parametric Variations - Size and Location	Data plot pages 526-1309
III.	Wing Parametric Variations - Incidence and Dihedral	Data plot pages 1310-1804
IV.	Surface Effectiveness, Model Buildup and Directional Stability at High Angles of Attack	Data plot pages 1805-2207

CONFIGURATIONS INVESTIGATED

The baseline model was a 0.015-scale modified version of the McDonnell Douglas model 256-14 booster configuration which was designed by NSRDC to allow the following variations in geometry: canard vertical location, size and incidence angle; wing vertical location, size, incidence angle, dihedral angle and variable wing tip fins; and dorsal fin size. A sketch of the baseline model is shown in Figure 2. In addition to the geometrical variations, the model had deflectable elevons, canard trailing edge flaps, dorsal fin rudders, and wing tip rudders. Deflection angles were obtained by replacing the control surface with a separate surface set to the desired angle. A typical model installation is shown in Figure 3 for configuration B1C2F1W1V1 with an aileron control deflection of 20 degrees.

Four pressure ports were used for measuring the base pressures, and were located as shown in Figure 4. Measurements from the pressure ports were used to calculate the base drag coefficient.

To ensure a turbulent boundary layer, artificial transition strips were applied as shown in Figure 5. Wing, body and canard grit size were calculated by the method of Braslow and Know for a tunnel Reynolds number of 2×10^6 per foot.

Model Components Tested

B1 = Baseline MDAC booster body (length = 3.453 ft)

B2 = Baseline MDAC booster body (length = 3.06 ft)

W1 = Baseline booster wing (planform area = 1.355 ft^2)

W2 = Alternate high aspect ratio wing (planform area = 1.148 ft^2)

V1 = Booster wing tip vertical fin (planform area = 0.226 ft^2)

V2 = Booster wing tip extension (planform area = 0.15 ft^2)

CONFIGURATIONS INVESTIGATED
(CONTINUED)

Model Component Tested (Con't)

D1 = Booster large dorsal fin

D2 = Booster small dorsal fin

D3 = Booster small dorsal fin

C1 = Booster large canard

C2 = Booster small canard

C3 = C2 with F1 portion removed

F1 = Canard trailing edge control surface for C1 (20% chord exposed area)

F2 = Canard trailing edge control surface for C1 (40% chord exposed area)

F3 = Canard flap, F2 for C2 with F1 portion removed

For detailed information on the above components refer to the model component sheets, pages 52 through 68.

Combinations Tested

B1

B1W1V1

B1C2F1

B1C2F2

B1C1F1W1V1

B1C1F1W1V2D1

B1C2F1W1V1

B1C2F1W2D2

B1C2F2W1V1

B1C3F3W1V1

B1C2F1W1V2

B1C2F1W1V2D1

V1C2F1W1V1D2

B1C2F1W1V1D3

B2C2F1W1V1

See Data Collation Sheets for a complete list of combinations tested.

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES δ_e	δ_c	δ_a	δ_r	Γ_w	i_c	i_w	CND POS	WNG POS
RN2001	B1C2F1W1V1	A	0	38/0	1	0	0	0	0	7°40'	3	0	1	1
002		0	A	39/0										
003		6	↓	40/0										
004		15	↓	41/0							↓			
005		A	0	23/0							15			
006		0	A	24/0										
007		6	↓	25/0										
008		15	↓	26/0							↓		↓	
009		A	0	43/0							3		2	
010		0	A	44/0										
011		6	↓	45/0										
012		15	↓	46/0							↓			
013		A	0	51/0							15			
014		0	A	52/0										
015		6	↓	53/0										
016		15	↓	54/0							↓		↓	↓
017		A	0	915/0							3		1	2
018		0	A	916/0										
019		6	↓	917/0										
020	↓	15	↓	918/0	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	LID	CAB			L3
CAF	BETA(1)	BETA(3)										

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS: α or β SCHEDULES

αA = -4, 0, 2, 4, 6, 8, 10, 15, 20

βA = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES S_e	S_c	S_u	S_r	Γ_w	i_c	i_w	CND POS	WING POS
RN2021	B1C2F1W1V1	A	0	494 0	1	0	0	0	0	7°40'	15	0	1	2
022		0	A	495 0										
023		6		496 0										
024		15		497 0										
025		A	0	498 0							3		2	
026		0	A	499 0										
027		6		500 0										
028		15		501 0										
029		A	0	502 0							15			
030		0	A	503 0										
031		6		504 0										
032		15		505 0										
033		A	0	124 0							3	3	1	1
034		0	A	125 0										
035		6		126 0										
036		15		127 0										
037		A	0	120 0							15			
038		0	A	121 0										
039		6		122 0										
040		15		123 0										

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CV	CL	CD	L/D	CAB			
CAE	BP(1)	BP(3)								MACH		

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

$\alpha A = -4, 0, 2, 4, 6, 8, 10, 15, 20$

$\beta A = -6, -3, 0, 3, 6$

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES δ_e	δ_c	δ_a	δ_r	Γ_w	i_c	i_w	CND POS	WNG POS
RN2 041	B1C2F1W1V1	A	0	133 0	1	0	0	0	0	7°46'	3	3	2	1
042		0	A	134 0										
043		6		135 0										
044		15		136 0										
045		A	0	141 0							15			
046		0	A	142 0										
047		6		143 0										
048		15		144 0										
049		A	0	162 0							3		1	2
050		0	A	163 0										
051		6		164 0										
052		15		165 0										
053		A	0	167 0							15			
054		0	A	168 0										
055		6		169 0										
056		15		170 0										
057		A	0	175 0							3		2	
058		0	A	176 0										
059		6		186 0										
060		15		187 0										

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	LID	CAB			
CAF	BP(1)	BP(3)								MACH		13

COEFFICIENTS: α_A = -4, 0, 2, 4, 6, 8, 10, 15, 20 → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

β_A = -6, -3, 0, 3, 6

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TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES S_e	S_c	S_a	S_r	Γ_w	i_c	i_w	CND POS	WNG POS
RN2061	B1C2F1W1V1	A	0	180 0	1	0	0	0	0	7°40'	15	3	2	2
062	↓	0	A	181 0	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
063		6	↓	182 0										
064		15	↓	183 0										
065	B1C1F1W1V1	A	0	33 0							3	0	1	1
066	↓	0	A	34 0							↓	↓	↓	↓
067		6	↓	35 0										
068		15	↓	36 0										
069		A	0	28 0							15			
070		0	A	29 0							↓			
071		6	↓	30 0										
072		15	↓	31 0										
073		A	0	47 0							3		2	
074		0	A	48 0							↓		↓	
075		6	↓	49 0										
076		15	↓	50 0										
077		A	0	55 0							15			
078		0	A	56 0							↓			
079		6	↓	57 0										
080	↓	15	↓	58 0	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			
CAF	BP(1)	BP(3)								MACH		

COEFFICIENTS:

α or β SCHEDULES

α_A : -4, 0, 2, 4, 6, 8, 10, 15, 20

β_A : -6, -3, 0, 3, 6

→ IDPVAR(1) | IDPVAR(2) | NDV

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TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES Se	Sc	Sa	Sr	Γw	ic	iw	CND POS	WING POS
RN2081	B1C1F1W1V1	A	0	3[illegible]	1	0	0	0	0	7°40	3	0	1	2
082		0	A	[illegible]										
083		6	↓	3[illegible]										
084		15	↓	3[illegible]							↓			
085		A	0	4[illegible]							15			
086		0	A	4[illegible]										
087		6	↓	4[illegible]										
088		15	↓	4[illegible]							↓		↓	
089		A	0	476							3		2	
090		0	A	471										
091		6	↓	425										
092		15	↓	479							↓			
093		A	0	4[illegible]							15			
094		0	A	4[illegible]										
095		6	↓	470										
096		15	↓	471							↓	↓	↓	↓
097		A	0	1[illegible]							3	3	1	1
098		0	A	1[illegible]										
099		6	↓	1[illegible]										
100		15	↓	131							↓	↓	↓	↓

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	GAB			
CAE	BP(1)	BP(3)								MACH		13

COEFFICIENTS: αA = -4, 0, 2, 4, 6, 8, 10, 15, 20 → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

βA = -6, -3, 0, 3, 6

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TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4				NO. of RUNS	PARAMETRIC VALUES Se	Sc	Sa	Sr	Γ_W	i_c	i_W	CND POS	WNG POS			
RN2101	BICIFIWIVI	A	0	116	0			1	0	0	0	0	7°40'	15	3	1	1			
102		0	A	117	0															
103		6	↓	118	0															
104		15	↓	119	0									↓		↓	↓			
105		A	0	131	0									3		2	1			
106		0	A	132	0															
107		6	↓	139	0									↓						
108		15	↓	140	0															
109		A	0	149	0									15						
110		0	A	150	0															
111		6	↓	151	0									↓		↓	↓			
112		15	↓	152	0															
113		A	0	159	0									3		1	2			
114		0	A	160	0															
115		6	↓	161	0									↓						
116		15	↓	162	0															
117		A	0	171	0									15						
118		0	A	172	0															
119		6	↓	173	0									↓		↓	↓			
120		15	↓	174	0															

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	LID	CAB			K3
CAE	BP(1)	BP(3)								MACH		

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

αA = -4, 0, 2, 4, 6, 8, 10, 15, 20

βA = -6, -3, 0, 3, 6

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TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES S_e	S_c	S_a	S_r	Γ_w	i_c	i_w	CND POS	WING POS
RN2 121	BICIFIWIVI	A	0	121 D	1	0	0	0	0	7°46	3	3	2	2
122		0	A	122 D										
123		6	↓	130 D										
124		15	↓	131 D							↓			
125		A	0	126 D							15			
126		0	A	127 D										
127		6	↓	128 D								↓	↓	↓
128	↓	15	↓	129 D							↓			
129	BICIFIWIV2 DI	A	0	431 D							3	0	1	1
130		0	A	432 D										
131		6	↓	433 D										
132		15	↓	434 D							↓			
133		A	0	435 D							15			
134		0	A	436 D										
135		6	↓	437 D										
136		15	↓	438 D							↓		↓	
137		A	0	72 D							3		2	
138		0	A	73 D										
139		6	↓	74 D							↓	↓	↓	↓
140	↓	15	↓	75 D	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			
CAF	BP(1)	BP(3)								MACH		

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

αA = -4, 0, 2, 4, 6, 8, 10, 15, 20

βA = -6, -3, 0, 3, 6

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TEST NSRDC-3110 DATASET COLLATION SHEET

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☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES S_e	S_c	S_a	S_r	Γ_w	i_c	i_w	CND POS	WING POS
RN2141	B1C1F1W1V2D1	A	0	00 0	1	0	0	0	0	7%40'	15	0	2	1
142		0	A	01 0										
143		6	↓	02 0										
144		15	↓	03 0							↓		↓	↓
145		A	0	04 0							3		1	2
146		0	A	05 0							↓			
147		6	↓	06 0										
148		15	↓	07 0										
149		A	0	08 0							15			
150		0	A	09 0							↓		↓	
151		6	↓	10 0										
152		15	↓	11 0										
153		A	0	12 0							3		2	
154		0	A	13 0							↓			
155		6	↓	14 0										
156		15	↓	15 0										
157		A	0	16 0							15			
158		0	A	17 0							↓			
159		6	↓	18 0										
160		15	↓	19 0										

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	LID	CAB			
CAF	BP(1)	BA(3)								MACH		13

COEFFICIENTS:

α or β SCHEDULES

α_A = -4, 0, 2, 4, 6, 8, 10, 15, 20

BA = -6, -3, 0, 3, 6

IDPVAR(1) | IDPVAR(2) | NDV

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES S_e	S_c	S_a	S_r	Γ_w	i_c	i_w	CND POS	WING POS
RN2 161	B1C1F1W1V2D1	A	0	153 0	1	0	0	0	0	7°40'	3	3	1	1
162		0	A	154 0										
163		6	↓	155 0										
164		15	↓	156 0							↓			
165		A	0	112 0							15			
166		0	A	113 0										
167		6	↓	114 0									↓	
168		15	↓	115 0							↓			
169		A	0	77 0							3		2	
170		0	A	78 0										
171		6	↓	79 0										
172		15	↓	80 0							↓			
173		A	0	85 0							15			
174		0	A	86 0										
175		6	↓	87 0							↓		↓	↓
176		15	↓	88 0										
177		A	0	123 0							3		1	2
178		0	A	124 0										
179		6	↓	125 0										
180		15	↓	126 0										

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			L3
CAF	BP(1)	BP(3)								MACH		

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:
α or β SCHEDULES

αA = -4, 0, 2, 4, 6, 8, 10, 15, 20

βA = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES Se	Sc	Sa	Sr	Γw	ic	iw	CND POS	WNG POS
RN2 181	B1G1F1W1V2 D1	A	0	505 0	1	0	0	0	0	7°40'	15	-3	1	2
182		0	A	506 0										
183		6	↓	507 0										
184		15	↓	508 0									↓	
185		A	0	173 0							3		2	
186		0	A	174 0										
187		6	↓	175 0										
188		15	↓	176 0							↓			
189		A	0	500 0							15			
190		0	A	501 0										
191	↓	6	↓	502 0										
192		15	↓	503 0							↓	↓	↓	↓
193	B1C2F1W1V2 D1	A	0	417 0							3	0	1	1
194		0	A	418 0										
195		6	↓	419 0										
196		15	↓	420 0							↓			
197		A	0	431 0							15			
198		0	A	432 0										
199	↓	6	↓	433 0										
200		15	↓	442 0							↓	↓	↓	↓

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	C.AB			
C.A.F. . .	BP(1).	BP(3). . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	MACH.		

COEFFICIENTS: αA = -4, 0, 2, 4, 6, 8, 10, 15, 20 → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

βA = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES S_e	S_c	S_a	S_r	Γ_w	i_c	i_w	CND POS	WING POS
RN2.201	B1C2F1W1V2D1	A	0	0	1	0	0	0	0	7°40'	3	0	2	1
202		0	A	0										
203		6		0										
204		15		0										
205		A	0	0							15			
206		0	A	0										
207		6		0										
208		15		0										
209		A	0	0							3		1	2
210		0	A	0										
211		6		0										
212		15		0										
213		A	0	0							15			
214		0	A	0										
215		6		0										
216		15		0										
217		A	0	0							3		2	
218		0	A	0										
219		6		0										
220		15		0										

1	7	13	19	25	31	37	43	49	55	61	67	75
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			
CAF	BP(1)	BP(3)								MACH		

COEFFICIENTS: α_A = -4, 0, 2, 4, 6, 8, 10, 15, 20 → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

β_A = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES Se	Sc	Sa	Sr	Γw	ic	iw	CND POS	WING POS
RN2221	B1C2F1W1V2D1	A	0	216 0	1	0	0	0	0	7°40'	15	0	2	2
222		0	A	164 0										
223		6	↓	963 0								↓	↓	↓
224		15	↓	963 0										
225		A	0	79 0							3	3	1	1
226		0	A	75 0										
227		6	↓	96 0							↓			
228		15	↓	97 0										
229		A	0	108 0							15			
230		0	A	109 0										
231		6	↓	110 0							↓		↓	
232		15	↓	111 0										
233		A	0	81 0							3		2	
234		0	A	82 0										
235		6	↓	83 0							↓		↓	
236		15	↓	84 0										
237		A	0	87 0							15			
238		0	A	70 0										
239		6	↓	71 0							↓	↓	↓	↓
240		15	↓	72 0										

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	LID	CAB			
CAE	BP(1)	BP(3)								MACH		23

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

αA = -4, 0, 2, 4, 6, 8, 10, 15, 20

βA = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES S_e	S_c	S_a	S_r	Γ_w	i_c	i_w	CND POS	WING POS
RN2241	B1C2F1W1V2D1	A	0	529 0	1	0	0	0	0	7°40'	3	3	1	2
242	↓	0	A	530 0	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
243		6	↓	531 0										
244		15	↓	532 0							↓			
245		A	0	509 0							15			
246		0	A	510 0							↓			
247		6	↓	511 0										
248		15	↓	512 0							↓		↓	
249		A	0	492 0							3		2	
250		0	A	493 0							↓		↓	
251		6	↓	494 0										
252		15	↓	495 0							↓			
253		A	0	496 0							15			
254		0	A	497 0							↓			
255	↓	6	↓	498 0										
256		15	↓	499 0							↓	↓	↓	↓
257	B1C2F1W2D1	A	0	553 0							3	0	1	1
258	↓	0	A	554 0							↓	↓	↓	↓
259		6	↓	555 0										
260		15	↓	556 0	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	LID	CAB			KT
CAE	BP(1)	BP(3)								MACH		

COEFFICIENTS: IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

α_A = -4, 0, 2, 4, 6, 8, 10, 15, 20

β_A = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES Se	Sc	Sa	Sr	Γw	ic	iw	CND POS	WNG POS
RN2261	B1C2F1W2D1	A	0	5310	1	0	0	0	0	7°40'	15	0	1	1
262		0	A	5311										
263		6	↓	5312										
264		15	↓	5313							↓		↓	
265		A	0	5315							3		2	
266		0	A	5316							↓		↓	
267		6	↓	5317										
268		15	↓	5314										
269		A	0	5319							15			
270		0	A	5320							↓			
271		6	↓	5321									↓	↓
272		15	↓	5322										
273		A	0	5314									1	2
274		0	A	5315									↓	↓
275		6	↓	5316							↓			
276		15	↓	5317									↓	
277		A	0	5324							3		2	
278		0	A	5325							↓		↓	
279		6	↓	5326										
280		15	↓	5327										

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CV	CL	CD	LID	CAB			KI
CAE	BP(1)	BP(3)								MACH		

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

αA = -4, 0, 2, 4, 6, 8, 10, 15, 20

βA = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES S_e	S_c	S_a	S_r	Γ_W	i_c	i_W	CND POS	WNG POS
RN2281	B1C2F1W2D1	A	0	511 0	1	0	0	0	0	7%b	15	0	2	1
282		0	A	512 0										
283		6		513 0										
284		15		514 0										
285		A	0	515 0							3	3	1	1
286		0	A	516 0										
287		6		517 0										
288		15		518 0										
289		A	0	519 0							15			
290		0	A	520 0										
291		6		521 0										
292		15		522 0									2	
293		A	0	523 0							3			
294		0	A	524 0										
295		6		525 0										
296		15		526 0										
297		A	0	527 0							15			
298		0	A	528 0										
299		6		529 0										
300		15		530 0										

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	LLD	CAB			LJ
CAE	BP(1)	BP(3)								MACH		

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

αA = -4, 0, 2, 4, 6, 8, 10, 15, 20

βA = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES Se	Sc	Sa	Sr	Γw	ic	iw	CNO POS	WNG POS
RN2301	B1C2F1W2D1	A	0	931 0	1	0	0	0	0	7°40'	3	3	1	2
302		0	A	932 0										
303		6	↓	933 0										
304		15	↓	934 0							↓			
305		A	0	935 0							15			
306		0	A	936 0										
307		6	↓	937 0										
308		15	↓	938 0							↓		↓	
309		A	0	939 0							3		2	
310		0	A	940 0										
311		6	↓	941 0							↓			
312		15	↓	942 0							15			
313		A	0	943 0										
314		0	A	944 0										
315		6	↓	945 0										
316	↓	15	↓	946 0		↓	↓	↓	↓	↓	↓	↓	↓	↓
317	B1	A	0	401 0		-	-	-	-	-	-	-	-	-
318	↓	0	A	402 0		-	-	-	-	-	-	-	-	-
319	↓	6	↓	403 0		-	-	-	-	-	-	-	-	-
320	↓	15	↓	404 0	↓	-	-	-	-	-	-	-	-	-

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CAL	CYN	CY	CL	CD	CLO	CAB	MACH		IS
CAF	BP(1)	RF(3)										

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

αA : -4, 0, 2, 4, 6, 8, 10, 15, 20

βA : -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES δ_e	δ_c	δ_a	δ_r	Γ_w	i_c	ι_w	CHO POS	WHE POS
RN2321	B1C2F2W1V1	A	0	623 0	1	0	10	0	0	7%	3	0	1	1
322		0	A	624 0										
323		6	↓	625 0										
324		15	↓	626 0			20							
325		A	0	627 0										
326		0	A	628 0										
327		6	↓	629 0										
328		15	↓	630 0										
329	B1C2F1W1V1	A	0	607 0		-20	0							
330		0	A	608 0										
331		6	↓	609 0										
332		15	↓	610 0										
333	B1C2F2W1V1	A	0	631 0			10							
334		0	A	632 0										
335		6	↓	633 0										
336		15	↓	634 0										
337		A	0	635 0			20							
338		0	A	636 0										
339		6	↓	637 0										
340		15	↓	638 0										

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	LID	CAB			
CAE	BPC(1)	BPC(3)								MACH		23

COEFFICIENTS: $\alpha A = -4, 0, 2, 4, 6, 8, 10, 15, 20$ → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

$\beta A = -6, -3, 0, 3, 6$

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES δ_e	δ_c	δ_a	δ_r	Γ_w	i_c	L_N	CND POS	WNG POS
RN2341	B1C2F1W1V1	A	0	611	1	-10	0	0	0	7%	3	0	1	1
342		0	A	612										
343		6	↓	613										
344	↓	15	↓	614			↓							
345	B1C2F2W1V1	A	0	615			10							
346		0	A	616										
347		6	↓	617										
348		15	↓	618			↓							
349		A	0	619			20							
350		0	A	620										
351		6	↓	621										
352	↓	15	↓	622		↓	↓							
353	B1C2F1W1V1	A	0	623		10	0							
354		0	A	624										
355		6	↓	625										
356	↓	15	↓	626										
357	B1C2F2W1V1	A	0	627			10							
358		0	A	628										
359		6	↓	629										
360	↓	15	↓	630		↓	↓	↓	↓	↓	↓	↓	↓	↓

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	LID	CAB			13
CAE	BP(1)	BP(3)								MACH		

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES

α_A = -4, 0, 2, 4, 6, 8, 10, 15, 20

β_A = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES δ_e	δ_c	δ_a	δ_r	Γ_w	i_c	L_W	CNO POS	WNG POS
RN2361	B1C2F2W1V1	A	0	0	1	10	20	0	0	7%0	3	0	1	1
362		0	A	0										
363		6		0										
364		15		0										
365	B1C2F1W1V1	A	0	0		20	0							
366		0	A	0										
367		6		0										
368		15		0										
369	B1C2F2W1V1	A	0	0			10							
370		0	A	0										
371		6		0										
372		15		0										
373		A	0	0			20							
374		0	A	0										
375		6		0										
376		15		0										
377	B1C2F1W1V1	A	0	0		30	0							
378		0	A	0										
379		6		0										
380		15		0										

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			
C.A.F.	B.P.(1).	B.P.(3).								MACH		73

COEFFICIENTS: α_A = -4, 0, 2, 4, 6, 8, 10, 15, 20

α or β SCHEDULES: β_A = -6, -3, 0, 3, 6

IDPVAR(1) | IDPVAR(2) | NDV

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES Se	Sc	Sa	Sr	Tw	Lc	Lw	CNO POS	WING POS
RN2381	B1G2F2W1V1	A	0	0	1	30	10	0	0	7°40'	3	0	1	1
382		0	A	0										
383		6	↓	0										
384		15	↓	0			↓							
385		A	0	0			20							
386		0	A	0										
387		6	↓	0										
388		15	↓	0		↓	↓	↓						
389		A	0	0		0	0	10						
390		0	A	0										
391		6	↓	0										
392		15	↓	0				↓						
393		A	0	0				20						
394		0	A	0										
395		6	↓	0										
396		15	↓	0		↓	↓	↓						
397		A	0	0		-10	0	10						
398		0	A	0										
399		6	↓	0										
400	↓	15	↓	0	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			VS
C.A.E.	B.P.(W)	B.P.(3)								MACH		

COEFFICIENTS: αA = -4, 0, 2, 4, 6, 8, 10, 15, 20 → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES: βA = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES Se	Sc	Sa	Sr	Tw	ic	iv	CNO POS	WING POS
RN2401	B1C2F2W1V1	A	0	733/0	1	-10	0	20	0	740'	3	0	1	1
402		0	A	734/0										
403		6	↓	735/0										
404		15	↓	736/0		↓		↓						
405		A	0	721/0		10		10						
406		0	A	722/0										
407		6	↓	723/0										
408		15	↓	724/0				↓						
409		A	0	725/0				20						
410		0	A	726/0										
411		6	↓	727/0										
412		15	↓	728/0		↓	↓	↓						
413		A	0	741/0		0	20	10						
414		0	A	742/0										
415		6	↓	743/0										
416		15	↓	744/0		↓	↓	↓						
417		A	0	753/0		0	20	20						
418		0	A	754/0										
419		6	↓	755/0										
420		15	↓	756/0		↓	↓	↓	↓	↓	↓	↓	↓	↓

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			VS
CAF	BC(1)	BC(2)								MACH		

COEFFICIENTS: αA = -4, 0, 2, 4, 6, 8, 10, 15, 20 → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES: βA = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES δ_e	δ_c	δ_a	δ_r	Γ_W	i_c	i_W	CND POS	WNG POS
RN2431	B1C2F2W1V1	A	0	737 0	1	-10	20	-10	0	7°40'	3	0	1	1
432		0	A	738 0										
433		6	↓	739 0										
434		15	↓	740 0				↓						
435		A	0	357 0				20						
436		0	A	358 0										
437		6	↓	354 0										
438		15	↓	760 0		↓		↓						
439		A	0	745 0		10		10						
430		0	A	746 0										
431		6	↓	747 0										
432		15	↓	748 0				↓						
433		A	0	749 0				20						
434		0	A	350 0										
435		6	↓	351 0										
436	↓	15	↓	352 0		↓	↓	↓	↓	↓		↓		↓
437	B1C2F1	A	0	413 0		-	0	-	-	-		-		-
438		0	A	414 0		-	↓	-	-	-		-		-
439		6	↓	415 0		-		-	-	-		-		-
440	↓	15	↓	416 0		-	↓	-	-	-	↓	-	↓	-

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			IS
CAF	BPC(1)	BPC(2)								MACH		

COEFFICIENTS: α_A = -4, 0, 2, 4, 6, 8, 10, 15, 20 → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

β_A = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES Se	Sc	Sa	Sr	Tw	ic	iw	CNO POS	WING POS
RN2441	B1C2F1	A	0	711	1	–	10	–	–	–	3	–	1	–
442		0	A	712		–		–	–	–		–		–
443		6		713		–		–	–	–		–		–
444		15		714		–		–	–	–		–		–
445		A	0	715		–	20	–	–	–		–		–
446		0	A	716		–		–	–	–		–		–
447		6		717		–		–	–	–		–		–
448		15		718		–		–	–	–		–		–
449	B1C2F2	A	0	719		–		–	–	–		–		–
450		0	A	800		–		–	–	–		–		–
451		6		801		–		–	–	–		–		–
452		15		802		–		–	–	–		–		–
453		A	0	803		–	10	–	–	–		–		–
454		0	A	804		–		–	–	–		–		–
455		6		805		–		–	–	–		–		–
456		15		806		–		–	–	–		–		–
457	B1W1V1	A	0	654		-20	–	0	0	7240	–	0	–	1
458		0	A	655			–				–		–	
459		6		656			–				–		–	
460		15		657			–				–		–	

1	7	13	19	25	31	37	43	49	55	61	67	75 76
GN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			IS
CAF	BE(1)	BE(3)								MACH		

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

αA = -4, 0, 2, 4, 6, 8, 10, 15, 20

βA = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4				NO. of RUNS	PARAMETRIC VALUES δ_e	δ_c	δ_a	δ_r	Γ_w	i_c	i_w	CNO POS	WNG POS			
RN2461	B1W1V1	A	0	.647 0				1	-10	-	0	0	7°40'	-	0	-	1			
462		0	A	.643 0						-				-		-				
463		6	↓	.646 0						-				-		-				
464		15	↓	.641 0					↓	-				-		-				
465		A	0	.636 0					0	-				-		-				
466		0	A	.637 0						-				-		-				
467		6	↓	.638 0						-				-		-				
468		15	↓	.639 0					↓	-				-		-				
469		A	0	.640 0					10	-				-		-				
470		0	A	.641 0						-				-		-				
471		6	↓	.642 0						-				-		-				
472		15	↓	.643 0					↓	-				-		-				
473		A	0	.648 0					20	-				-		-				
474		0	A	.644 0						-				-		-				
475		6	↓	.650 0						-				-		-				
476		15	↓	.651 0					↓	-				-		-				
477		A	0	.656 0					30	-				-		-				
478		0	A	.651 0						-				-		-				
479		6	↓	.655 0						-				-		-				
480		15	↓	.657 0					↓	-	↓	↓	↓	-	↓	-	↓			

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			US
CAF	BP(1)	BP(2)								MACH		

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

α_A = -4, 0, 2, 4, 6, 8, 10, 15, 20

β_A = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES Se	Sc	Sa	Sr	Γ_W	i_c	i_N	CNO POS	WNO POS
RN2481	B1W1V1	A	0	765 0	1	0	-	10	0	7°40'	-	0	-	1
482		0	A	766 0			-				-		-	
483		6		767 0			-				-		-	
484		15		768 0			-				-		-	
485		A	0	777 0			-	20			-		-	
486		0	A	778 0			-				-		-	
487		6		779 0			-				-		-	
488		15		780 0			-				-		-	
489		A	0	761 0		-10	-	10			-		-	
490		0	A	762 0			-				-		-	
491		6		763 0			-				-		-	
492		15		764 0			-				-		-	
493		A	0	781 0		-10	-	20			-		-	
494		0	A	782 0			-				-		-	
495		6		783 0			-				-		-	
496		15		784 0			-				-		-	
497		A	0	769 0		10	-	10			-		-	
498		0	A	770 0			-				-		-	
499		6		771 0			-				-		-	
500		15		772 0			-				-		-	

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB	MACH		
CAF	BCLW	BPCB										

COEFFICIENTS: α_A = -4, 0, 2, 4, 6, 8, 10, 15, 20

α or β SCHEDULES

β_A = -6, -3, 0, 3, 6

IDPVAR(1) | IDPVAR(2) | NDV

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES δe	δc	δa	δr	Γw	ic	iw	CND POS	WAG POS
RN2501	B1W1V1	A	0	774	1	10	-	20	0	7°40'	-	0	-	1
502		0	A	774			-				-		-	
503		6		775			-				-		-	
504		15		776			-				-		-	
505		0		785		0	-	0	-5		-		-	
506		6		786			-				-		-	
507		15		787			-				-		-	
508		0		795			-		-10		-		-	
509		6		797			-				-		-	
510		15		798			-				-		-	
511	B1C2F1W1V1	0		701			0		-5		3		1	
512		6		703										
513		15		704										
514		0		710					-10					
515		6		711										
516		15		712										
517		A	0	561					0	15°				
518		0	A	562										
519		6		563										
520		15		564										

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			L3
C.A.E.	B.P.(1).	B.P.(3).								MACH		

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

αA = -4, 0, 2, 4, 6, 8, 10, 15, 20

βA = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES Se	Sc	Sa	Sr	Γ_N	i_c	i_N	CNO POS	WING POS
RN2531	B1C2F1W1V1	A	0	565	1	0	0	0	0	15	3	0	2	1
532		0	A	566										
533		6		567										
534		15		568										
535	B1C2F1W1V2D1	A	0	569									1	
536		0	A	570										
537		6		571										
538		15		572										
539		A	0	573									2	
540		0	A	574										
541		6		575										
542		15		576								1		
543	B1C2F1W2D1	A	0	577								3	1	
544		0	A	578										
545		6		579										
546		15		580										
547		A	0	581									2	
548		0	A	582										
549		6		583										
550		15		584										

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			IS
CAF	BP(1)	RF(3)								MACH		

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

αA = -4, 0, 2, 4, 6, 8, 10, 15, 20

βA = -6, -3, 0, 3, 6

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES Se	Sc	Sa	Sr	F_N	i_c	i_N	CNO POS	WING POS
RN2541	B1C2F1W1V1	A	0	541	1	0	10	0	0	7°40'	3	0	1	1
542		0	A	542										
543		6	↓	543										
544		15	↓	544			↓							
545		A	0	603			20							
546		0	A	604										
547		6	↓	605										
548	↓	15	↓	606									↓	
549	B1C2F2W1V1	A	0	631									2	
550		0	A	634										
551		6	↓	633										
552	↓	15	↓	634			↓		↓				↓	
553	B1C2F1W1V2	A	0	426			0		−				1	
554		0	A	427					−					
555		6	↓	428					−					
556	↓	15	↓	433					−				↓	
557	B1C2F1W1V1	A	0	551					0					
558		0	A	552										
559		6	↓	553										
560	↓	15	↓	554		↓	↓	↓	↓	↓	↓	↓	↓	↓

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	CAB			V3
CAF	BC(1)	BC(2)								MACH		

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

$\alpha A = -4, 0, 2, 4, 6, 8, 10, 15, 20$

$\beta A = -6, -3, 0, 3, 6$

NASA-MSFC-MAF

TEST NSRDC-3110 DATASET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	RUN NUMBER 0.4	NO. of RUNS	PARAMETRIC VALUES δ_e	δ_c	δ_a	δ_r	Γ_w	i_c	i_N	CNO POS	WING DES
RN2561	B1C2F1W1V1D2	A	0	947 0	1	0	0	0	0	7°40'	3	0	1	1
562		0	A	948 0										
563		6	↓	949 0										
564	↓	15	↓	950 0										
565	B1C3K3W1V1	A	0	951 0										
566		0	A	840 0										
567		6	↓	841 0										
568	↓	15	↓	842 0										
569	B1C2F1W1V1D3	A	0	952 0										
570		0	A	953 0										
571		6	↓	954 0										
572	↓	15	↓	955 0										
573	B2C2F1W1V1	A	0	857 0										
574		0	A	858 0										
575		6	↓	859 0										
576	↓	15	↓	860 0										

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CLM	CRL	CYN	CY	CL	CD	CLD	CAB			KS
CAF	BP(1)	BP(3)								MACH		

COEFFICIENTS: α_A: -4, 0, 2, 4, 6, 8, 10, 15, 20 → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

BA: -6, -3, 0, 3, 6

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TEST FACILITY DESCRIPTION

The test program was conducted in the NSRDC 7 x 10-foot transonic wind tunnel, which is a closed-loop, continuous flow tunnel with a Mach number range from M = 0.30 to M = 1.20 at simulated altitudes from sea level to 40,000 feet. Reynolds number can be varied between 1×10^6 and 3×10^6 per foot by adjusting the settling chamber total pressure.

TABLE I. SADSAC NOMENCLATURE OF AERODYNAMIC COEFFICIENTS

COEFFICIENT	COEFFICIENT NAME	SADSAC NOMENCLATURE		
		BODY AXIS	STABILITY AXIS	WIND AXIS
C_A	Total Axial Force	CA	-	-
C_{AB}	Base Axial Force	CAB	--	-
C_{AF}	Forebody Axial Force	CAF	-	-
C_D	Total Drag Force	-	CD	CDTOTL
C_{DB}	Base Drag Force	-	CDB	CDBASE
C_{DF}	Forebody Drag Force	-	CDF	CDFORE
C_L	Lift Force	-	CL	CL
C_N	Normal Force	CN	-	-
C_Y	Side Force	CY	CY	CC
C_ℓ	Rolling Moment	CBL	CSL	CWL
C_m	Pitching Moment	CLM	CLM	CPM
C_n	Yawing Moment	CYN	CLN	CLN
L/D	Lift-To-Drag Force Ratio	-	L/D	CL/CD
L/D	Lift-To-Forebody Drag Force Ratio	-	L/DF	CL/CDF
N/A	Normal-To-Axial Force Ratio	N/A	-	-
N/A	Normal-To-Forebody Axial Force Ratio	CN/CAF	-	-

TABLE II.

TEST CONDITIONS
TEST NSRDC 3110

MACH NUMBER	REYNOLDS NUMBER per unit length	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
0.38	2.69×10^6	1.35	

BALANCE UTILIZED: TSB-24

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF	1500 #	7.5 #	0.0290
SF	500 #	2.5 #	0.0097
AF	100 #	0.5 #	0.0020
PM	1850 in #	9.25 in #	0.0009
YM	625 in #	3.13 in #	0.0003
RM	760 in #	3.75 in #	0.0004

COMMENTS:

DATA REDUCTION

This section includes a description of the data reduction accomplished by NSRDC and by SADSAC

For SADSAC

A six-component strain gauge balance was used to measure the force and moment data for this test (see Figure 1 for axis system orientation); four base pressures were also measured but only two were used to calculate the base axial force coefficient (CAB). Reference data utilized to reduce the measured data to coefficient form are listed below:

S_{ref} = Wing W1 planform area = 1.355 ft^2

ℓ_{ref} = b_{ref} = Body B1 length = 41.436 in

The moment reference point (MRP) for all data in which B1 was tested is 31.14 inches aft of the fuselage nose, on the lateral centerline and 0.225 inch above the vertical centerline of the model. The MRP for all data in which B2 was tested is 26.64 inches aft of the nose, on the lateral centerline, and 0.225 inch above the model vertical centerline.

Data submitted to SADSAC were CN, CA, CLM, CBL, CYN, CY, CL, CD, L/D, CAB, CAF, BP(1), and BP(3); BP(1) and BP(3) are base pressure coefficients applicable to base pressure tubes 1 and 3 (see Figure 4). The base axial force coefficient (CAB) was calculated as listed below:

$$CAB = BP(1)\,[A1/S_{ref}] + [BP(1) - BP(3)]\,[A2/S_{ref}] + BP(3)\,[A3/S_{ref}]$$

A1 = total area of 10 nozzles at the throats = 0.0121 ft^2

A2 = total area of 10 nozzles at the nozzle exits minus the total throat area (A1)

A3 = total base area minus A1 and A2

A3 = 0.1312 ft^2 for high wing

A3 = 0.1372 ft^2 for low wing

By SADSAC

A request for incremental effects of control deflection required additional processing of the basic data by SADSAC. Coefficient data was obtained at even values of angle of attack (α = -2, 0, 4, 6, 8 and 10°) and then used to determine the difference between the datasets, i.e. $(CN)_{\delta_e=10} - (CN)_{\delta_e=0}$. Incremental data were obtained for the following coefficients: CL, CLM, CD, L/D, CYN, CBL, and CY.

SUMMARY DATA PLOT INDEX

CONFIGURATION VARIABLE	CONFIGURATION CONDITIONS FIXED							PLOTTED COEFFICIENT SCHEDULE	PAGES
	WNDSIZ	INCIDW	DIHDRL	WNGPOS	CNDSIZ	INCIDC	CNDPOS		
Canard Size	W1V1	0°	7.66°	1	-	3°	1	A	1-8
Canard Size	W1V1	0°	7.66°	1	-	3°	1	B	9-11
Canard Position	W1V1	0°	7.66°	1	C2	3°	-	A	12-19
Canard Position	W1V1	0°	7.66°	1	C2	3°	-	B	20-22
Canard Incidence	W1V1	0°	7.66°	1	C2	-	1	A	23-30
Canard Incidence	W1V1	0°	7.66°	1	C2	-	1	B	31-33
Canard Size	W1V1	0°	7.66°	1	-	3°	2	A	34-41
Canard Size	W1V1	0°	7.66°	1	-	3°	2	B	42-44
Canard Position	W1V1	0°	7.66°	2	C2	3°	-	A	45-52
Canard Position	W1V1	0°	7.66°	2	C2	3°	-	B	53-55
Canard Incidence	W1V1	0°	7.66°	1	C2	-	2	A	56-63
Canard Incidence	W1V1	0°	7.66°	1	C2	-	2	B	64-66
Canard Size	W1V1	3°	7.66°	1	-	3°	1	A	67-74
Canard Size	W1V1	3°	7.66°	1	-	3°	1	B	75-77
Canard Position	W1V1	3°	7.66°	1	C2	3°	-	A	78-85
Canard Position	W1V1	3°	7.66°	1	C2	3°	-	B	86-88
Canard Incidence	W1V1	3°	7.66°	1	C2	-	1	A	89-96
Canard Incidence	W1V1	3°	7.66°	1	C2	-	1	B	97-99

SUMMARY DATA PLOT INDEX
(CONTINUED)

CONFIGURATION VARIABLE	CONFIGURATION CONDITIONS FIXED							PLOTTED COEFFICIENT SCHEDULE	PAGES
	WNDSIZ	INCIDW	DIHDRL	WNGPOS	CNDSIZ	INCIDC	CNDPOS		
Canard Size	W1V1	3°	7.66°	1	-	3°	2	A	100-107
Canard Size	W1V1	3°	7.66°	1	-	3°	2	B	108-110
Canard Position	W1V1	3°	7.66°	2	C2	3°	-	A	111-118
Canard Position	W1V1	3°	7.66°	2	C2	3°	-	B	119-121
Canard Incidence	W1V1	3°	7.66°	2	C2	-	2	A	122-129
Canard Incidence	W1V1	3°	7.66°	2	C2	-	2	B	130-132
Canard Size	W1V1	0°	7.66°	2	-	3°	1	A	133-140
Canard Size	W1V1	0°	7.66°	2	-	3°	1	B	141-143
Canard Incidence	W1V1	0°	7.66°	2	C2	-	1	A	144-151
Canard Incidence	W1V1	0°	7.66°	2	C2	-	1	B	152-154
Canard Size	W1V1	0°	7.66°	2	C2	3°	1	A	155-162
Canard Size	W1V1	0°	7.66°	2	C2	3°	1	B	163-165
Canard Incidence	W1V1	0°	7.66°	2	C2	-	1	A	166-173
Canard Incidence	W1V1	0°	7.66°	2	C2	-	1	B	174-176
Canard Size	W1V1	3°	7.66°	2	-	3°	1	A	177-184
Canard Size	W1V1	3°	7.66°	2	-	3°	1	B	185-187

SUMMARY DATA PLOT INDEX
(CONTINUED)

CONFIGURATION VARIABLE	CONFIGURATION CONDITIONS FIXED							PLOTTED COEFFICIENT SCHEDULE	PAGES
	WNDSIZ	INCIDW	DIHDRL	WNGPOS	CNDSIZ	INCIDC	CNDPOS		
Canard Incidence	W1V1	3°	7.66°	2	C2	3°	1	A	188-195
Canard Incidence	W1V1	3°	7.66°	2	C2	3°	1	B	196-198
Canard Size	W1	3°	7.66°	2	-	3°	2	A	199-206
Canard Size	W1	3°	7.66°	2	-	3°	2	B	207-209
Canard Incidence	W1	3°	7.66°	2	C2	-	2	A	210-217
Canard Incidence	W1	3°	7.66°	2	C2	-	2	B	218-220
Canard Size	W1	0°	7.66°	1	-	15°	1	A	221-228
Canard Size	W1	0°	7.66°	1	-	15°	1	B	229-231
Canard Position	W1	0°	7.66°	1	C2	15°	-	A	232-239
Canard Position	W1	0°	7.66°	1	C2	15°	-	B	240-242
Canard Size	W1	0°	7.66°	1	-	15°	2	A	243-250
Canard Size	W1	0°	7.66°	1	-	15°	2	B	251-253
Canard Position	W1	0°	7.66°	2	C2	15°	-	A	254-261
Canard Position	W1	0°	7.66°	2	C2	15°	-	B	262-264
Canard Size	W1	3°	7.66°	1	-	15°	1	A	265-272
Canard Size	W1	3°	7.66°	1	-	15°	1	B	273-275
Canard Position	W1	3°	7.66°	1	C2	15°	-	A	276-283
Canard Position	W1	3°	7.66°	1	C2	15°	-	B	284-286

SUMMARY DATA PLOT INDEX
(CONTINUED)

CONFIGURATION VARIABLE	CONFIGURATION CONDITIONS FIXED							PLOTTED COEFFICIENT SCHEDULE	PAGES
	WNDSIZ	INCIDW	DIHDRL	WNGPOS	CNDSIZ	INCIDC	CNDPOS		
Canard Size	W1	3°	7.66°	1	-	15°	-	A	287-294
Canard Size	W1	3°	7.66°	1	-	15°	-	B	295-297
Canard Position	W1	3°	7.66°	1	C2	15°	-	A	298-305
Canard Position	W1	3°	7.66°	1	C2	15°	-	B	306-308
Canard Size	W1	3°	7.66°	2	-	15°	1 & 2	A & B	309-352
Canard Position	W1	0° & 3°	7.66°	1 & 2	C1	3° & 15°	1 & 2	A & B	353-440
Canard Incidence	W1	0° & 3°	7.66°	1 & 2	C1	-	1 & 2	A & B	441-528
Wing Size	-	0° & 3°	7.66°	1	C2	3° & 15°	1 & 2	A & B	529-616
Wing Size	-	0° & 3°	7.66°	2	C2	3° & 15°	1 & 2	A & B	617-704
Wing Size	-	0° & 3°	7.66°	1	C1	3° & 15°	1 & 2	A & B	705-792
Wing Size	-	0° & 3°	7.66°	2	C1	3° & 15°	1 & 2	A & B	793-880
Wing Location	W1V1 W1V2 W2 W1	0°	7.66°	-	C2	3° & 15°	1 & 2	A & B	881-1001
Wing Location	W1V1 W1V2 W2 W1	3°	7.66°	-	C2	3° & 15°	1 & 2	A & B	1002-1133

SUMMARY DATA PLOT INDEX
(CONTINUED)

CONFIGURATION VARIABLE	CONFIGURATION CONDITIONS FIXED							PLOTTED COEFFICIENT SCHEDULE	PAGES
	WNDSIZ	INCIDW	DIHDRL	WNGPOS	CNDSIZ	INCIDC	CNDPOS		
Wing Location	W1V1 W1V2	0°	7.66°	-	C1	3° & 15°	1 & 2	A & B	1134-1221
Wing Location	W1V1 W1V2	3°	7.66°	-	C1	3° & 15°	1 & 2	A & B	1222-1309
Wing Incidence	W1V1	-	7.66°	1 & 2	C1 & C2	3° & 15°	1 & 2	A & B	1310-1485
Wing Incidence	W1V2	-	7.66°	1 & 2	C1 & C2	3° & 15°	1 & 2	A & B	1486-1661
Wing Incidence	W2	-	7.66°	1 & 2	C2	3° & 15°	1 & 2	A & B	1662-1738
Wing Dihedral	W1V1 W1V2 W2	0° & 3°	-	1	C2	3°	1 & 2	A & B	1739-1804
Elevon Deflection	W1V1	0°	7.66°	1	C2 & Off	3°	1	A & B	1805-1848
Wing Tip Rudder Deflection	W1V1	0°	7.66°	1	C2 & Off	3°	1	A & B	1849-1854
Dorsal Fin	W1V1 W1V2	0°	7.66°	1	C2	3°	1	A & B	1855-1876
Canard Flap Deflection and Size	W1V1 & Off	0°	7.66°	1	C2	3°	1	A & B	1877-1898
Canard Effectiveness	W1V1 & Off	0°	7.66°	1	C2	3°	1	A & B	1899-1964
Aileron Effectiveness	W1V1	0°	7.66°	1	C2 & Off	3°	1	A & B	1976-2074

SUMMARY DATA PLOT INDEX
(CONTINUED)

CONFIGURATION VARIABLE	CONFIGURATION CONDITIONS FIXED							PLOTTED COEFFICIENT SCHEDULE	PAGES
	WNDSIZ	INCIDW	DIHDRL	WNGPOS	CNDSIZ	INCIDC	CNDPOS		
Elevon Effectiveness	W1V1	0°	7.66°	1	C2 & Off	3°	1	C	2075-2090
Rudder Effectiveness	W1V1	0°	7.66°	1	C2 & Off	3°	1	D	2091-2102
Canard Effectiveness	W1V1	0°	7.66°	1	C2	3°	1	E	2103-2126
Aileron Effectiveness	W1V1	0°	7.66°	1	C2 & Off	3°	1	F	2127-2180
Directional Stability At High Alpha	W1V1 W1V2 W2	0° & 3°	7.66°	1 & 2	C1 & C2	3° & 15°	1 & 2	G	1281-2207

PLOTTED COEFFICIENT SCHEDULE:

(A) CN, CA, CLM, CL, CD, L/D & CAB vs. ALPHA
CLM vs. CL

(B) CBL, CYN & CY vs. BETA

(C) DCL, DCLM, DCD & DL/D vs. ELEVTR

(D) DCYN, DCBL, DCY, DCD, DCLM, & DL/D vs. RUDDER

(E) DCL, DCLM, DCD & DL/D vs. CANARD

(F) DCYN, DCBL, DCY, DCD, DCLM & DL/D vs. AILRON

(G) CBL, CYN & CY vs. ALPHA

Notes:

1. Positive directions of force coefficients moment coefficients, and angles are indicated by arrows.

2. For clarity, origins of wind and stability axes have been displaced from the center of gravity.

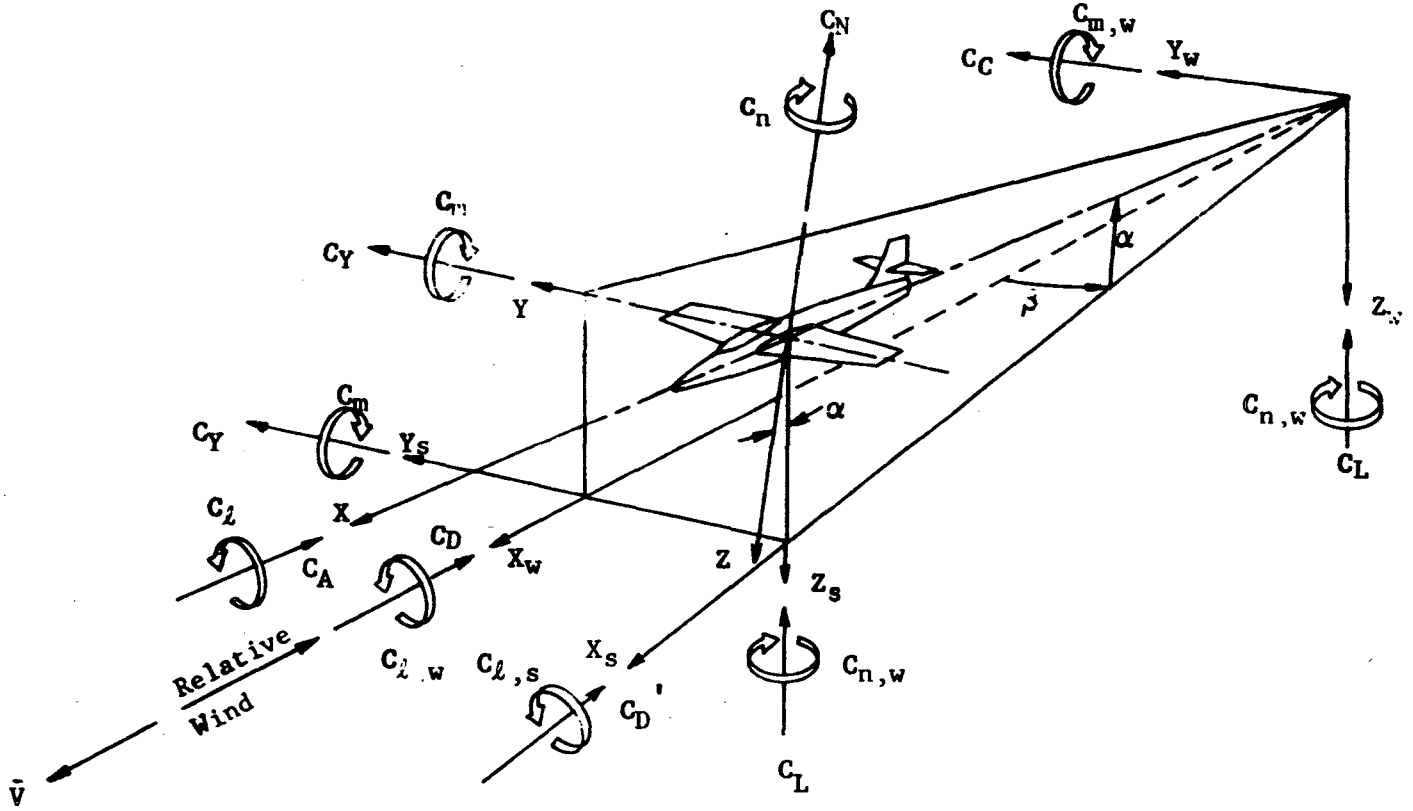

Figure 1. Axis systems, showing direction and sense of force and moment coefficients, angle of attack, and sideslip angle

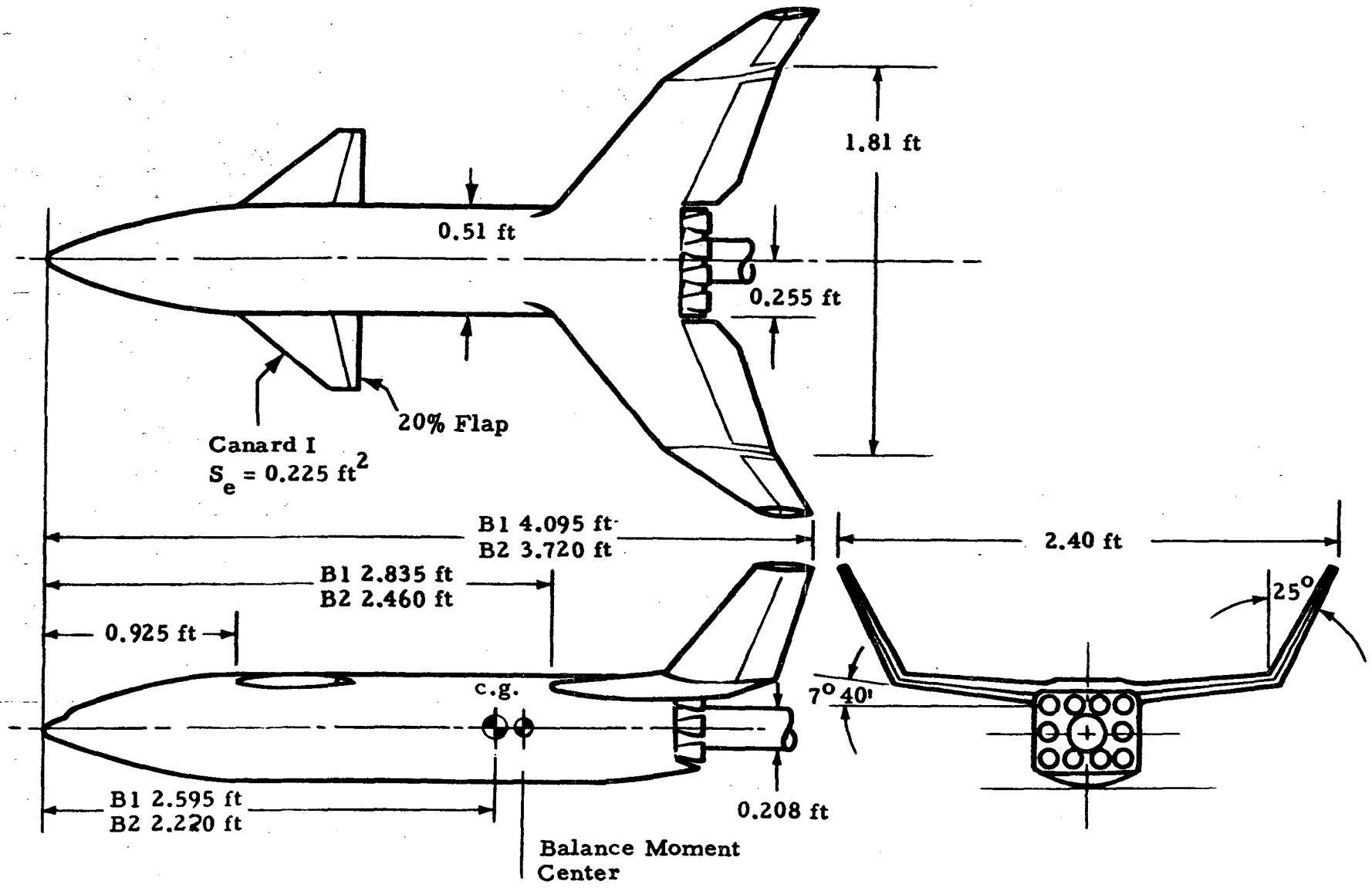

Fig. 2. General Arrangement of a Typical High Wing – High Canard Configuration

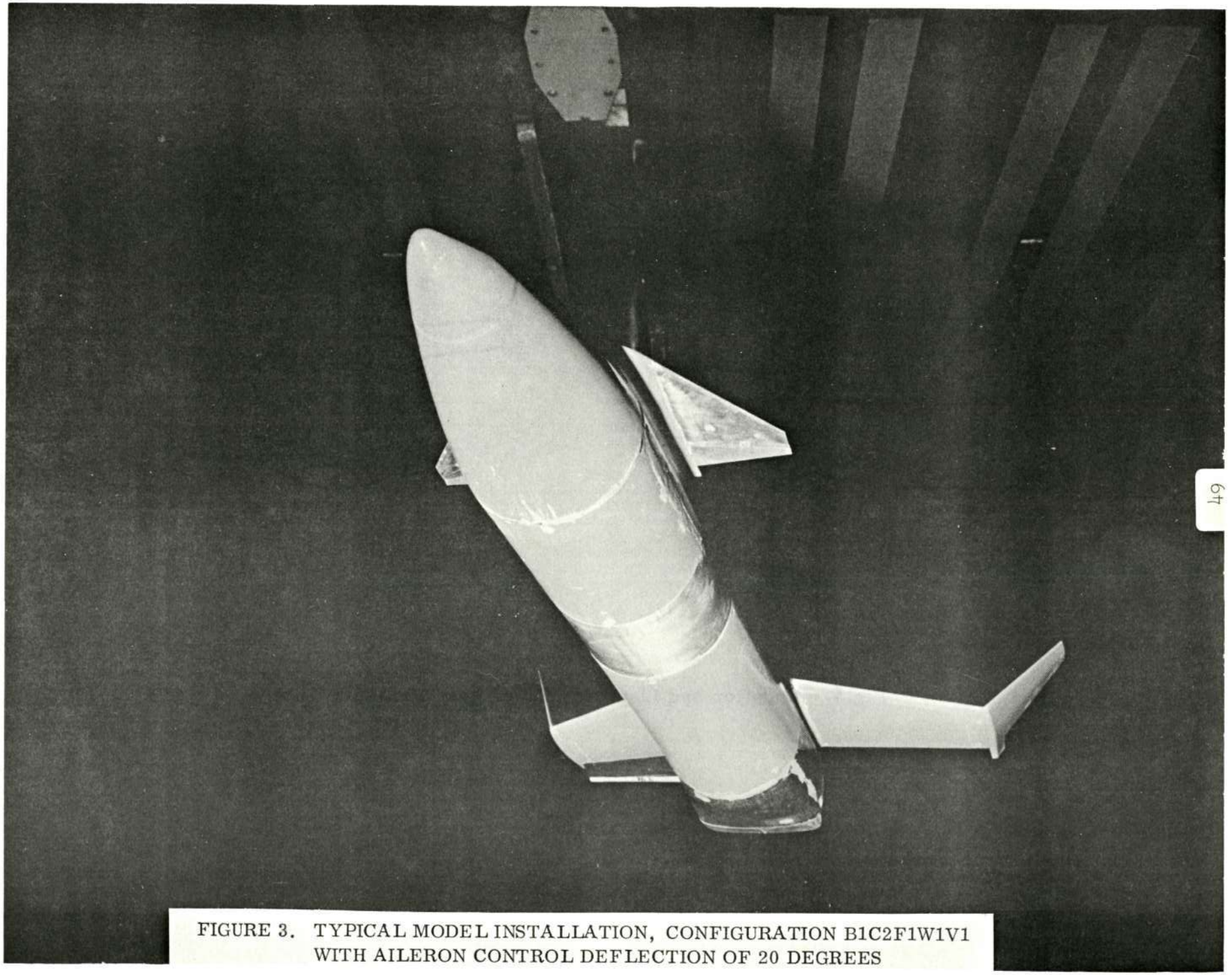

FIGURE 3. TYPICAL MODEL INSTALLATION, CONFIGURATION B1C2F1W1V1 WITH AILERON CONTROL DEFLECTION OF 20 DEGREES

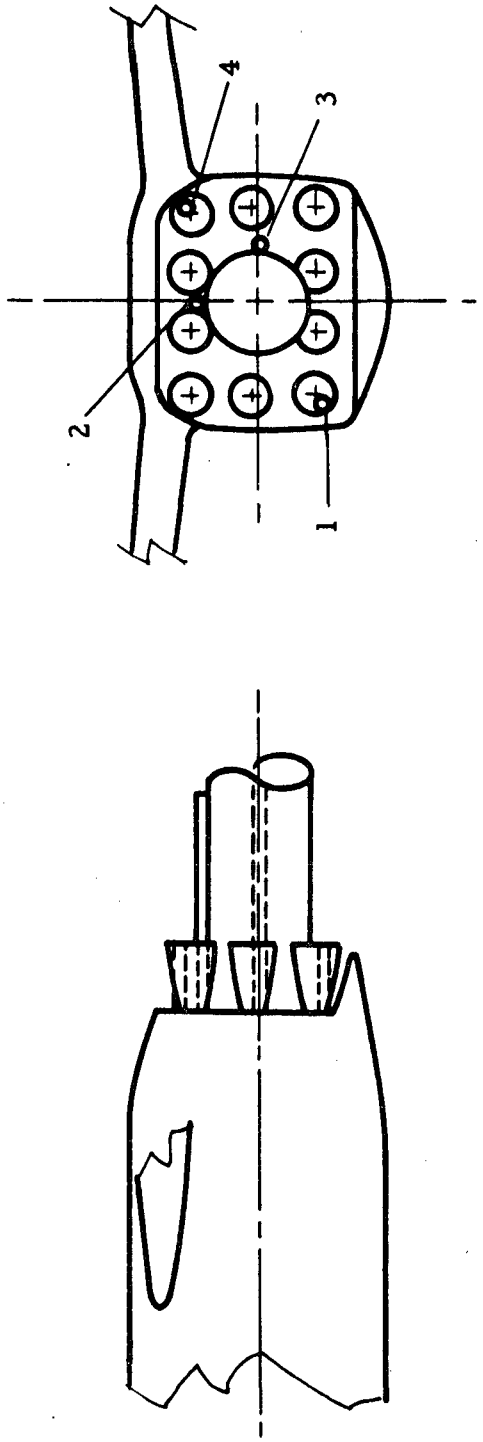

Fig. 4 - Location and Identification of Base Pressure Tubes

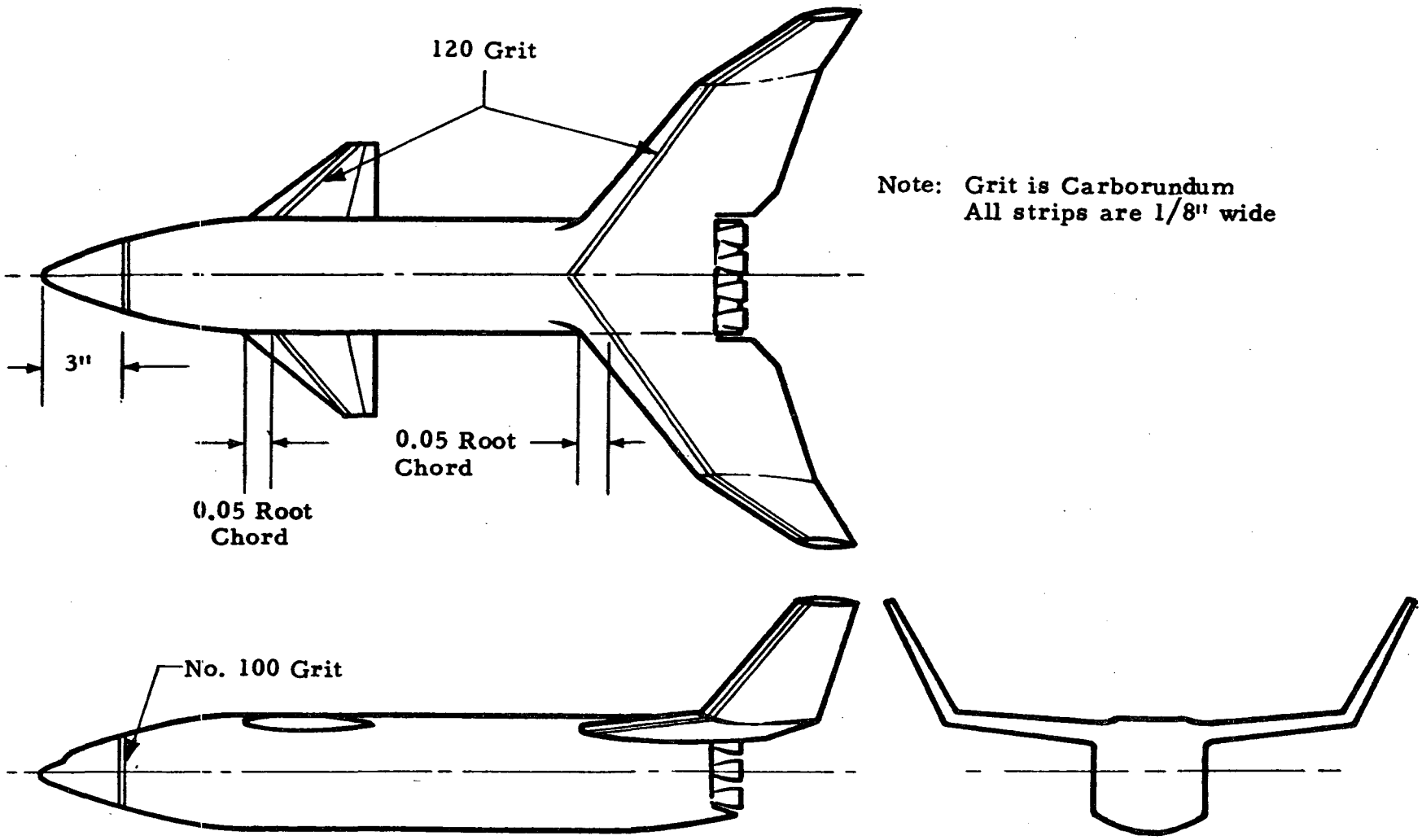

Fig. 5 - Typical Transition Grit Installation on Body, Wing and Canard

TABLE III.

MODEL COMPONENT: BODY - B1

GENERAL DESCRIPTION: Baseline MDAC booster body 256-19A-X
X = total length is 229 vs 241.7 for 19A

DRAWING NUMBER: NSRDC A15201I-A

DIMENSIONS:		FULL-SCALE	MODEL SCALE
Length		229 ft	3.453 ft
Max. Width		34 ft	0.51 ft
Max. Depth		34 ft	0.51 ft
Fineness Ratio			
Area			
Max. Cross-Sectional		907.92 ft^2	0.204 ft^2
Planform		—	—
Wetted		—	—
Base	high wing	866.67 ft^2	0.195 ft^2
	Low wing	893.21 ft^2	0.201 ft^2

TABLE IV.

MODEL COMPONENT: BODY - B2

GENERAL DESCRIPTION: Baseline MDAC boattail body 256-14

DRAWING NUMBER: NSRDC A152011

DIMENSIONS:		FULL-SCALE	MODEL SCALE
Length		204.08 ft	3.06 ft
Max. Width		34 ft	0.51 ft
Max. Depth		34 ft	0.51 ft
Fineness Ratio		6	6
Area			
Max. Cross-Sectional		907.92 ft^2	0.204 ft^2
Planform		—	—
Wetted		—	—
Base :	high wing	866.67 ft^2	0.195 ft^2
	Low wing	893.21 ft^2	0.201 ft^2

TABLE V.

MODEL COMPONENT: W1

GENERAL DESCRIPTION: Baseline booster wing 256-14

DRAWING NUMBER: NSRDC A152024-1

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area		
Planform	6020 ft²	1.355 ft²
Wetted	—	—
Span (equivalent)	120.67 ft.	1.81 ft
Aspect Ratio	2.42	2.42
Rate of Taper	—	—
Taper Ratio	.547	.547
Diehedral Angle, degrees	7°10', 15°	7°10', 15°
Incidence Angle, degrees	0°, 3°	0° 3°
Aerodynamic Twist, degrees	—	—
Toe-In Angle	0°	0°
Cant Angle	—	—
Sweep Back Angles, degrees		
Leading Edge	40°	40°
Trailing Edge	19°31'	19°31'
0.25 Element Line	—	—
Chords:		
Root (Wing Sta. 0.0)	64.55 ft	.969 ft
Tip, (equivalent)	35.4 ft	.53 ft
MAC	—	—
Fus. Sta. of .25 MAC	—	—
W.P. of .25 MAC	—	—
B.L. of .25 MAC	—	—
Airfoil Section		
Root	64A010	64A010
Tip	64A010	64A010
EXPOSED DATA		
Area	3960 ft²	.891 ft²
Span, (equivalent)	86.8 ft	1.30 ft.
Aspect Ratio	1.89	1.29
Taper Ratio	.627	.627
Chords		
Root	56.4 ft	.845 ft
Tip	35.4	.53 ft
MAC	—	—
Fus. Sta. of .25 MAC	—	—
W.P. of .25 MAC	—	—
B.L. of .25 MAC	—	—

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TABLE VI.

MODEL COMPONENT: W2

GENERAL DESCRIPTION: Alternate high aspect ratio wing

DRAWING NUMBER: NSRDC A-15 2024-5

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area		
Planform	5100 ft²	1.148 ft²
Wetted		
Span (equivalent)	152.5 ft	229 ft
Aspect Ratio	.455	.455
Rate of Taper		
Taper Ratio		
Diehedral Angle, degrees	7°40', 15°	7°40', 15°
Incidence Angle, degrees	0°, 3°	0°, 3°
Aerodynamic Twist, degrees	0	0
Toe-In Angle		
Cant Angle		
Sweep Back Angles, degrees		
Leading Edge	40°	40°
Trailing Edge	28.5°	28.5°
0.25 Element Line		
Chords:		
Root (Wing Sta. 0.0)	45.9 ft	0.689 ft
Tip, (equivalent)	20.9 ft	0.314 ft
MAC		
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		
B.L. of .25 MAC		
Airfoil Section		
Root	64A010	64A010
Tip	64A010	64A010
EXPOSED DATA		
Area	3500 ft²	0.734 ft²
Span, (equivalent)	118.2 ft	1.775 ft
Aspect Ratio	4	4
Taper Ratio	.547	.547
Chords		
Root	38.2 ft	0.574 ft
Tip	20.9 ft	0.314 ft
MAC		
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		
B.L. of .25 MAC		

TABLE VII. V II

MODEL COMPONENT: V I

GENERAL DESCRIPTION: Rooster wing tip vertical fin

(Dimensions given are for each tip)

DRAWING NUMBER: NSRDC A152027-1,4

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area		
Planform	1010 ft²	.226 ft²
Wetted	—	—
Semi-Span (equivalent)	38.30 ft	.582 ft
Aspect Ratio	1.5	1.5
Rate of Taper	—	—
Taper Ratio	.467	.467
Diehedral Angle, degrees	29°	29°
Incidence Angle, degrees	3°	3°
Aerodynamic Twist, degrees	0	0
Toe-In Angle	0	0
Cant Angle	0	0
Sweep Back Angles, degrees		
Leading Edge	40°	40°
Trailing Edge	19°31'	19°31'
0.25 Element Line	—	—
Chords:		
Root (Wing Sta. 0.0)	35.35 ft	.530 ft
Tip, (equivalent)	16.50 ft	.297 ft
MAC	—	—
Fus. Sta. of .25 MAC	—	—
W.P. of .25 MAC	—	—
B.L. of .25 MAC	—	—
Airfoil Section	—	—
Root	64A010	64A010
Tip	64A009	64A009
EXPOSED DATA		
Area	—	—
Span, (equivalent)	—	—
Aspect Ratio	—	—
Taper Ratio	—	—
Chords	—	—
Root	—	—
Tip	—	—
MAC	—	—
Fus. Sta. of .25 MAC	—	—
W.P. of .25 MAC	—	—
B.L. of .25 MAC	—	—

TABLE VIII.

MODEL COMPONENT: V2

GENERAL DESCRIPTION: Parallel wing tip extensions

(Dimensions are for each tip)

DRAWING NUMBER: NSRDC A 152030-1

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area		
Planform	671 ft²	0.15 ft²
Wetted		
Span (equivalent)	21.9 ft	.329 ft
Aspect Ratio	0.72	0.72
Rate of Taper		
Taper Ratio	0.70	0.70
Diehedral Angle, degrees	7°40' 15"	7°40' 15"
Incidence Angle, degrees	0° 3°	0° 3°
Aerodynamic Twist, degrees		
Toe-In Angle		
Cant Angle		
Sweep Back Angles, degrees		
Leading Edge	40°	40°
Trailing Edge	19°31'	19°31'
0.25 Element Line		
Chords:		
Root (Wing Sta. 0.0)	35.9 ft	.538 ft
Tip, (equivalent)	25.2 ft.	.378 ft
MAC		
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		
B.L. of .25 MAC		
Airfoil Section		
Root	64A010	64A010
Tip	64A010	64A010
EXPOSED DATA		
Area		
Span, (equivalent)		
Aspect Ratio		
Taper Ratio		
Chords		
Root		
Tip		
MAC		
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		
B.L. of .25 MAC		

TABLE IX.

MODEL COMPONENT: D1

GENERAL DESCRIPTION: Booster Large Dorsal Fin

DRAWING NUMBER: NSRDC A152016-1

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area	1920 ft^2	0.149 ft^2
Span (equivalent)	55.4 ft	.831 ft
Inb'd equivalent chord	48.8 ft	.731 ft
Outb'd equivalent chord	22.2 ft	.333 ft
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	.30	.30
At Outb'd equiv. chord	.30	.30
Sweep Back Angles, degrees		
Leading Edge	55°	55°
Tailing Edge	43.5°	43.5°
Hingeline	—	—
Area Moment (Normal to hinge line)	—	—

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TABLE X.

MODEL COMPONENT: D2

GENERAL DESCRIPTION: Booster small Dorsal Fin

DRAWING NUMBER: —

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area	1450 ft.^{2}	.326 ft.^{2}
Span (equivalent)	36.1 ft.	.541 ft.
Inb'd equivalent chord	48.8 ft.	.731 ft.
Outb'd equivalent chord	31.5 ft.	.473 ft.
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	.30	.30
At Outb'd equiv. chord	.30	.30
Sweep Back Angles, degrees		
Leading Edge	55°	55°
Tailing Edge	43.5°	43.5°
Hingeline	—	—
Area Moment (Normal to hinge line)	—	—

TABLE XI.

MODEL COMPONENT: D 3

GENERAL DESCRIPTION: Booster small Dorsal Fin

DRAWING NUMBER: _____

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area	1360 ft.²	.304 ft.²
Span (equivalent)	33.3 ft.	.500 ft.
Inb'd equivalent chord	48.8 ft.	.731 ft.
Outb'd equivalent chord	32.8 ft.	.492 ft.
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	.30	.30
At Outb'd equiv. chord	.30	.30
Sweep Back Angles, degrees		
Leading Edge	55°	55°
Tailing Edge	43.5°	43.5°
Hingeline	—	—
Area Moment (Normal to hinge line)	—	—

TABLE XII.

MODEL COMPONENT: C1

GENERAL DESCRIPTION: Body for Jet, canard

DRAWING NUMBER: NSRDC A-152018-5

DIMENSIONS:

	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area		
Planform	2650 ft²	0.596 ft²
Wetted	—	—
Span (equivalent)	78.7 ft	1.18 ft
Aspect Ratio	2.34	2.34
Rate of Taper	—	—
Taper Ratio	.124	.124
Diehedral Angle, degrees	0	0
Incidence Angle, degrees	3° 15'	3° 15'
Aerodynamic Twist, degrees	0	0
Toe-In Angle	—	—
Cant Angle	—	—
Sweep Back Angles, degrees	—	—
Leading Edge	53°09'	53°08'
Trailing Edge	0	0
0.25 Element Line	—	—
Chords:	—	—
Root (Wing Sta. 0.0)	59.8 ft	.897 ft
Tip, (equivalent)	7.47 ft	.112 ft
MAC, inches	—	—
Fus. Sta. of .25 MAC	—	—
W.P. of .25 MAC	—	—
Airfoil Section	—	—
Root	64A010	64A010
Tip	64A010	64A010
EXPOSED DATA		
Area	1000 ft²	0.225 ft²
Span, (equivalent)	44.7 ft	0.67 ft
Aspect Ratio	2	2
Taper Ratio	.2	.2
Chords	—	—
Root	37.3 ft	0.559 ft
Tip	7.47 ft	0.112 ft
MAC	—	—
Fus. Sta. of .25 MAC	—	—
W.P. of .25 MAC	—	—

TABLE XIII.

MODEL COMPONENT: C2

GENERAL DESCRIPTION: Body small canard

DRAWING NUMBER: NSRDC A152018-5

DIMENSIONS:

	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area		
Planform		
Wetted	2235 ft²	0.503 ft²
Span (equivalent)	72.6 ft	1.09 ft
Aspect Ratio	2.36	2.36
Rate of Taper		
Taper Ratio	.118	.118
Dihedral Angle, degrees	0	0
Incidence Angle, degrees	3°15'	3° 15'
Aerodynamic Twist, degrees	0	0
Toe-In Angle		
Cant Angle		
Sweep Back Angles, degrees		
Leading Edge	53°	53°
Trailing Edge	0	0
0.25 Element Line		
Chords:		
Root (Wing Sta. 0.0)	55. ft	.825 ft
Tip, (equivalent)	6.47 ft	.097 ft
MAC, inches		
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		
Airfoil Section		
Root	64A010	64A010
Tip	64A010	64A010
EXPOSED DATA		
Area	750 ft²	0.169 ft²
Span, (equivalent)	38.8 ft	0.571 ft
Aspect Ratio	2	2
Taper Ratio	0.2	0.2
Chords		
Root	32.2 ft	0.434 ft
Tip	6.46 ft	0.097 ft
MAC		
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		

TABLE XIV.

MODEL COMPONENT: C 3

GENERAL DESCRIPTION: C 2 with F1 portion removed.

DRAWING NUMBER:

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area		
Planform	1787 ft²	.4023 ft²
Wetted	—	—
Span (equivalent)	76.2 ft	1.09 ft
Aspect Ratio	3.25	3.25
Rate of Taper	—	—
Taper Ratio	.118	.118
Diehedral Angle, degrees	0°	0°
Incidence Angle, degrees	3°	3°
Aerodynamic Twist, degrees	0°	0°
Toe-In Angle	—	—
Cant Angle	—	—
Sweep Back Angles, degrees		
Leading Edge	53°	53°
Trailing Edge	19°55'	19° 55'
0.25 Element Line	—	—
Chords:		
Root (Wing Sta. 0.0)	44.0 ft.	.66 ft.
Tip, (equivalent)	5.17 ft.	.0776 ft.
MAC, inches	—	—
Fus. Sta. of .25 MAC	—	—
W.P. of .25 MAC	—	—
Airfoil Section		
Root	64A010 with last 20% removed.	
Tip	64A010 with last 20% removed.	
EXPOSED DATA		
Area	600 ft²	.135 ft.³
Span, (equivalent)	38.8 ft	.581 ft.
Aspect Ratio	2.5	2.5
Taper Ratio	.20	.20
Chords		
Root	25.76 ft.	.384 ft.
Tip	5.17 ft.	.0776 ft.
MAC	—	—
Fus. Sta. of .25 MAC	—	—
W.P. of .25 MAC	—	—

TABLE XV.

MODEL COMPONENT: F1 FOR CANARD C1

GENERAL DESCRIPTION: Double sweep trailing edge control (20% chord - exposed area)

DRAWING NUMBER: NSRDC A152017-8

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area	200 ft^2	0.045 ft^2
Span (equivalent)	44.7 ft	0.67 ft
Inb'd equivalent chord	7.46 ft	0.112 ft
Outb'd equivalent chord	1.495 ft	0.0224 ft
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.2	0.2
At Outb'd equiv. chord	0.2	0.2
Sweep Back Angles, degrees		
Leading Edge	14°56'	14°56'
Tailing Edge	0	0
Hingeline	—	—
Area Moment (Normal to hinge line)	—	—

TABLE XVI.

MODEL COMPONENT: F1 FOR CANARD C2

GENERAL DESCRIPTION: Boundary command trailing edge flap (20% chord - exposed area)

DRAWING NUMBER: _____

DIMENSIONS:

	FULL-SCALE	MODEL SCALE
Area	150 ft²	0.0338 ft²
Span (equivalent)	38.8 ft	0581 ft
Inb'd equivalent chord	6.45 ft	0.0968 ft
Outb'd equivalent chord	1.295 ft	0.0194 ft
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.2	0.2
At Outb'd equiv. chord	0.2	0.2
Sweep Back Angles, degrees		
Leading Edge	14°55'	14°55'
Tailing Edge	0	0
Hingeline	—	—
Area Moment (Normal to hinge line)	—	—

TABLE XVII.

MODEL COMPONENT: F2 WITH CANARD C1

GENERAL DESCRIPTION: Booster canard trailing edge control (40% chord)

DRAWING NUMBER: NSRDC A152017, 18

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area	400 ft^2	.09 ft^2
Span (equivalent)	44.7 ft	0.67 ft
Inb'd equivalent chord	14.92 ft	0.224 ft
Outb'd equivalent chord	2.99 ft	0.0449 ft
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.4	0.4
At Outb'd equiv. chord	0.4	0.4
Sweep Back Angles, degrees		
Leading Edge	28°04'	28°04'
Tailing Edge	0	0
Hingeline	—	—
Area Moment (Normal to hinge line)	—	—

TABLE XVIII. XVIII

MODEL COMPONENT: F2 WITH CANARD C2

GENERAL DESCRIPTION:

DRAWING NUMBER:

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area	300 ft²	0.0676 ft²
Span (equivalent)	38.8 ft	0.581 ft
Inb'd equivalent chord	12.9 ft	0.1936 ft
Outb'd equivalent chord	2.59 ft	0.0388 ft
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.4	0.4
At Outb'd equiv. chord	0.4	0.4
Sweep Back Angles, degrees		
Leading Edge	28°	28°
Tailing Edge	0	0
Hingeline	—	—
Area Moment (Normal to hinge line)	—	—

TABLE XIX. X / 1

MODEL COMPONENT: F 3

GENERAL DESCRIPTION: Canard Flap. Consists of F2 for C2 with F1 portion removed.

DRAWING NUMBER: _____

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area	150 ft.^{2}	0.0338 ft.^{2}
Span (equivalent)	38.8 ft.	0.581 ft.
Inb'd equivalent chord	6.45 ft	0.0968 ft.
Outb'd equivalent chord	2.54 ft.	0.0194 ft.
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.333	0.333
At Outb'd equiv. chord	0.333	0.333
Sweep Back Angles, degrees		
Leading Edge	28°	28°
Tailing Edge	14° 55'	14°55
Hingeline	—	—
Area Moment (Normal to hinge line)	—	—

NOMENCLATURE

(General)

SYMBOL	SADSAC SYMBOL	DEFINITION
α	ALPHA	angle of attack, angle between the projection of the wind X_w-axis on the body X, Z-plane and the body X-axis; degrees
β	BETA	sideslip angle, angle between the wind X_w-axis and the projection of this axis on the body X-Z-plane; degrees
ψ	PSI	yaw angle, angle of rotation about the body Z-axis, positive when the positive X-axis is rotated toward the positive Y-axis; degrees
ϕ	PHI	roll angle, angle of rotation about the body X-axis, positive when the positive Y-axis is rotated toward the positive Z-axis; degrees
ρ		air density; K_g/m^3, slugs/ft^3
a		speed of sound; m/sec, ft/sec
V		speed of vehicle relative to surrounding atmosphere; m/sec, ft/sec
q	Q(PSI) Q(PSF)	dynamic pressure; $1/2\rho V^2$, psi, psf
M	MACH	Mach number; V/a
RN/L	RN/L	Reynolds number per unit length; million/ft
p		static pressure; psi
P		total pressure; psi
C_p	CP	pressure coefficient; $(p-p_\infty)/q$

NOMENCLATURE (Continued)

Reference & C. G. Definitions

SYMBOL	SADSAC SYMBOL	DEFINITION
S		wing area; m^2, ft^2
S_{ref}	SREF	reference area; m^2, ft^2
$\bar{c}$		wing mean aerodynamic chord or reference chord; m, ft, in (see ℓ_{ref} or LREF)
ℓ_{ref}	LREF	reference length; m, ft, in.; (see $\bar{c}$)
b_{ref}	BREF	wing span or reference span; m, ft, in
A_b		base area; m^2, ft^2, in^2
c. g.		center of gravity
MRP	MRP	abbreviation for moment reference point
	XMRP	abbreviation for moment reference point on X-axis
	YMRP	abbreviation for moment reference point on Y-axis
	ZMRP	abbreviation for moment reference point on Z-axis

NOMENCLATURE (Continued)

Axis System General

SYMBOL	DEFINITION
F	force; F, lbs
M	moment; M, in-lb

Subscript	Definition
N	normal force
A	axial force
L	lift force
D	drag force
Y	force or moment about the Y axis
Z	moment about the Z axis
X	moment about the X axis
s	stability axis system
w	wind axis system
ref	reference conditions
∞	free stream conditions
t	total conditions
b	base

NOMENCLATURE (Continued)

Body Axis System

SYMBOL	SADSAC SYMBOL	DEFINITION
C_N	CN	normal force coefficient; F_N/qS
C_A	CA	axial force coefficient; F_A/qS
C_{A_f}	CAF	forebody axial force coefficient; $C_A - C_{A_b}$
C_m	CLM	pitching moment coefficient; $M_Y/qS\ \ell_{ref}$
C_y	CY	side force coefficient; F_Y/qS
C_n	CYN	yawing moment coefficient; $M_Z/qS\ b_{ref}$
C_ℓ	CBL	rolling moment coefficient, $M_X/qS\ b_{ref}$

NOMENCLATURE (Continued)

Stability Axis System

SYMBOL	SADSAC SYMBOL	DEFINITION
C_L	CL	lift force coefficient; F_L/qS
C_D	CD	drag force coefficient; F_D/qS
C_{D_b}	CDB	base drag coefficient
C_{D_f}	CDF	forebody drag coefficient; $C_D - C_{D_b}$
C_m	CLM	pitching moment coefficient; $M_{Y,s}/qS\ \ell_{ref}$
C_y	CY	side force coefficient; F_Y/qS
C_n	CLN	yawing moment coefficient; $M_{Z,s}/qS\ b_{ref}$
C_ℓ	CSL	rolling moment coefficient; $M_{X,s}/qS\ b_{ref}$
L/D	L/D	lift-to-drag ratio; C_L/C_D
L/D_f	L/DF	lift to forebody drag ratio; C_L/C_{D_f}

NOMENCLATURE (Continued)

Surface Definitions

SYMBOL	SADSAC SYMBOL	DEFINITION
i_t	HORIZT	horizontal tail incidence; positive when trailing edge down; degrees
δ		symmetrical surface deflection angle; degrees; positive deflections are:
	AILRON	aileron - total aileron deflection; (left aileron - right aileron)/2
	CANARD	canard - trailing edge down
	ELEVON	elevon - trailing edge down
	ELEVTR	elevator - trailing edge down
	FLAP	flap - trailing edge down
	RUDDER	rudder - trailing edge to the left
	SPOILR	spoiler - trailing edge down
	TAB	tab - trailing edge down with respect to control surface
δ		antisymmetrical surface deflection angle, degrees; positive trailing edge down:
	AIL-L	left aileron - trailing edge down
	AIL-R	right aileron - trailing edge down
	ELVN-L	left elevon - trailing edge down
	ELVN-R	right elevon - trailing edge down
	SPLR-L	left spoiler - trailing edge down
	SPLR-R	right spoiler - trailing edge down

SURFACE SUBSCRIPTS	DEFINITION
a	aileron
b	base
c	canard
e	elevator or elevon
f	flap
r	rudder or ruddervator
s	spoiler
t	tail

ADDITIONS TO NOMENCLATURE

SYMBOL	SADSAC SYMBOL	DEFINITION
CNDPOS	CNDPOS	canard vertical position (1=high, 2=low)
WNGPOS	WNGPOS	wing vertical position (1=high, 2=low)
i_w	INCIDW	wing incidence angle, positive when trailing edge down; deg.
Γ_W	DIHDRL	wing dihedral angle; deg.
i_c	INCIDC	canard incidence angle, positive when trailing edge down; deg.
ΔC_L	DCL	incremental lift coefficient, algebraic difference of two runs.
ΔC_D	DCD	incremental drag coefficient, algebraic difference of two runs.
ΔC_M	DCLM	incremental pitching moment coefficient, algebraic difference of two runs.
$\Delta L/D$	DL/D	incremental lift drag ratio, algebraic difference of two runs.
ΔC_y	DCY	incremental side force coefficient, algebraic difference of two runs.
ΔC_n	DCYN	incremental yawing moment coefficient, algebraic difference of two runs. Body axis system.
ΔC_ℓ	DCBL	incremental rolling moment coefficient, algebraic difference of two runs. Body axis system.

TABULATED DATA LISTING

A tabulated data listing, consisting of all aero data sets, both original and those created in arriving at the plotted material to be presented subsequently, is available as an addendum to this report. The tabular listing is made up in two sections:

(a) a brief summary list of all data sets containing the identifier, the descriptor, and the resident dependent variables.

(b) a full list of all data sets containing all resident or selected aerodynamic coefficients of the data sets as well as the above mentioned information.

The listing is currently sent on limited distribution to the following organizations:

NASA AMES	Mr. V. Stevens
NSRDC	Mr. D. Chadock

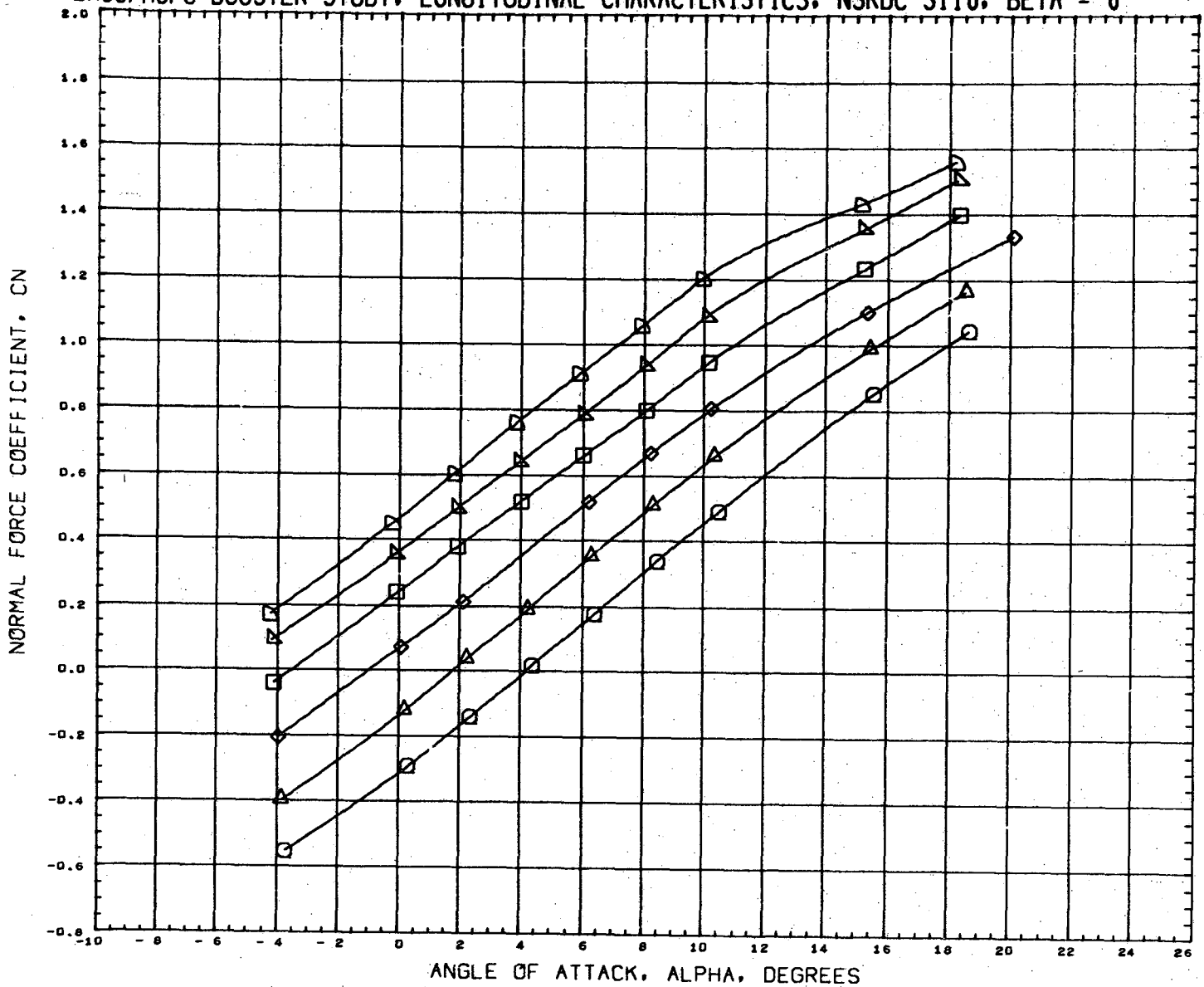
If copies of this listing are desired, please contact the above or the cognizant SADSAC personnel who, for this data, is:

W. R. Morgan
Department 2780
Chrysler Corporation Space Division
New Orleans, La. 70129

(504) 255-2304

PLOTTED DATA

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



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(RN2341)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2001)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2353)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2365)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2377)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
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-10.000	0.000	3.000	1.000
0.000	0.000	3.000	1.000
10.000	0.000	3.000	1.000
20.000	0.000	3.000	1.000
30.000	0.000	3.000	1.000

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BREF	41.4360	INCHES
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YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

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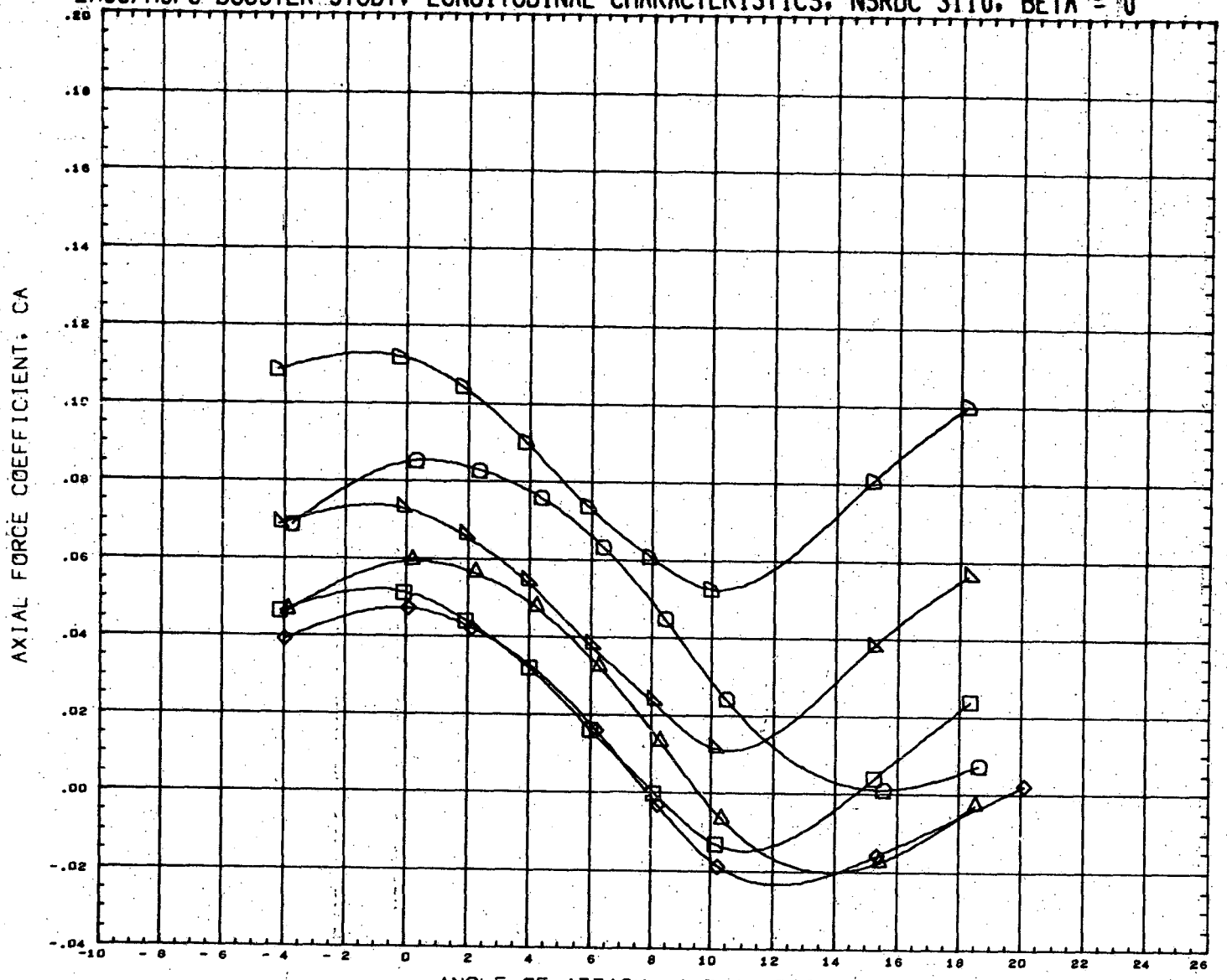

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MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
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-10.000	0.000	3.000	1.000
0.000	0.000	3.000	1.000
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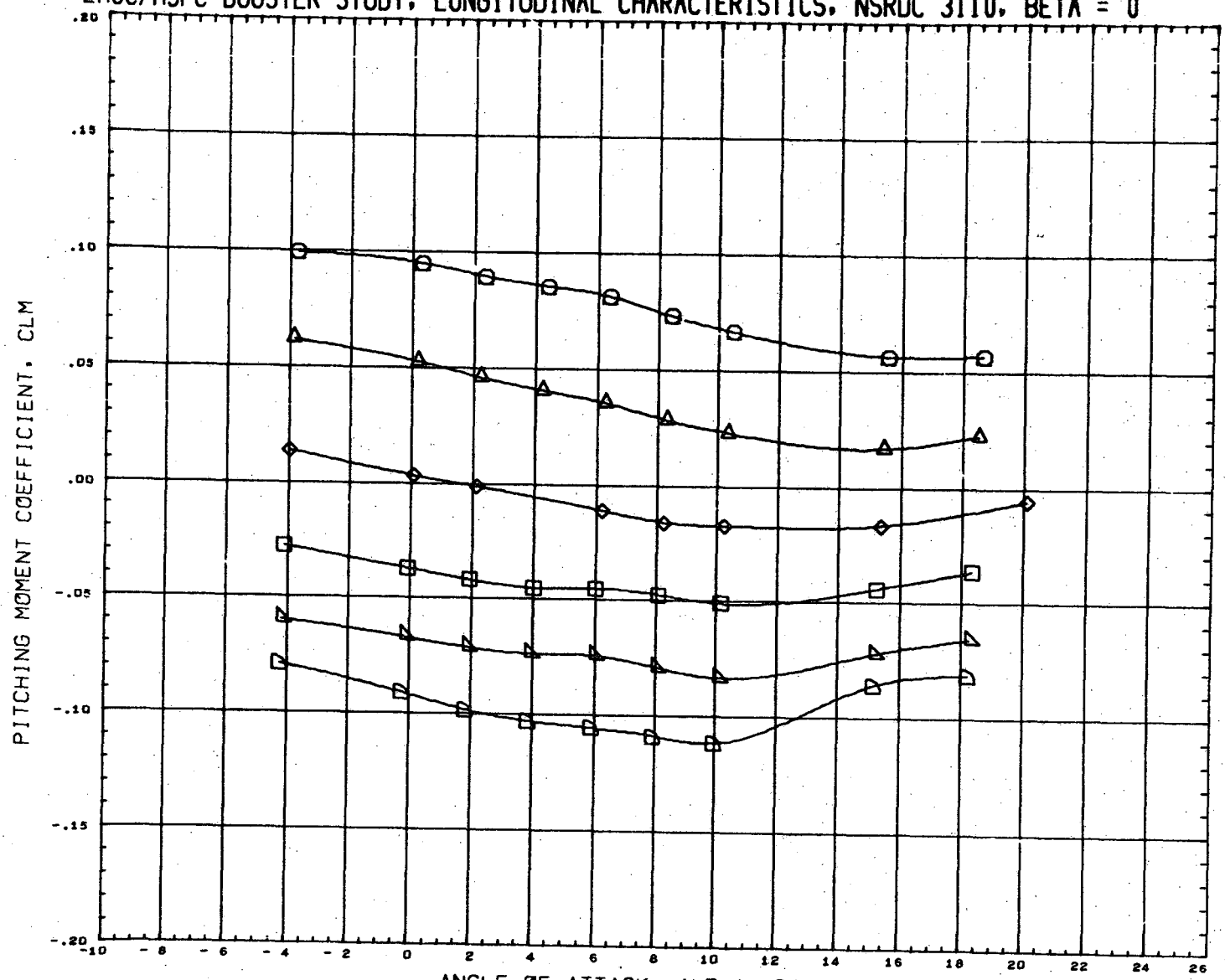

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(RN2365)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2377)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
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0.000	0.000	3.000	1.000
10.000	0.000	3.000	1.000
20.000	0.000	3.000	1.000
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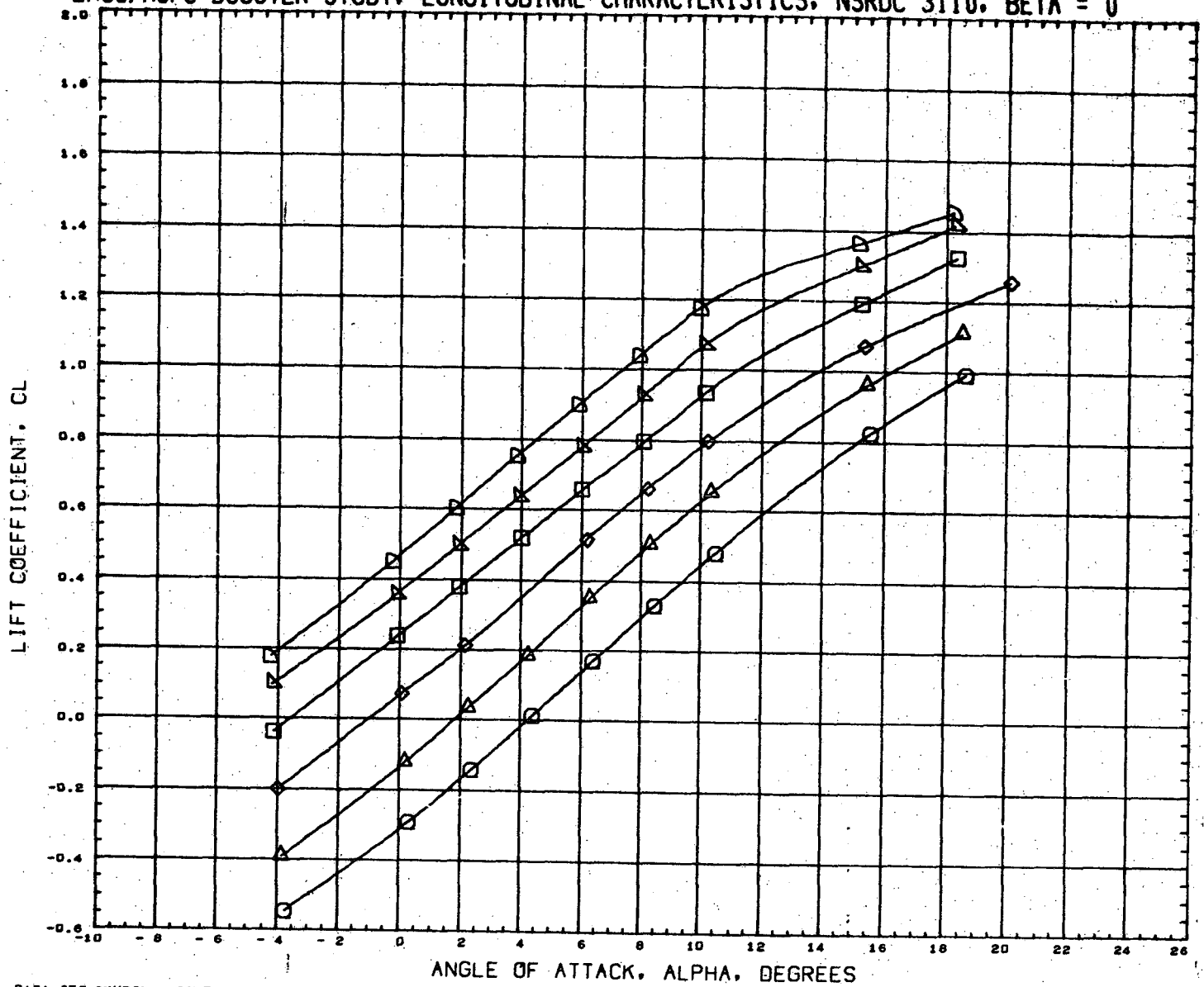

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(RN2001)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2353)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2365)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2377)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
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-10.000	0.000	3.000	1.000
0.000	0.000	3.000	1.000
10.000	0.000	3.000	1.000
20.000	0.000	3.000	1.000
30.000	0.000	3.000	1.000

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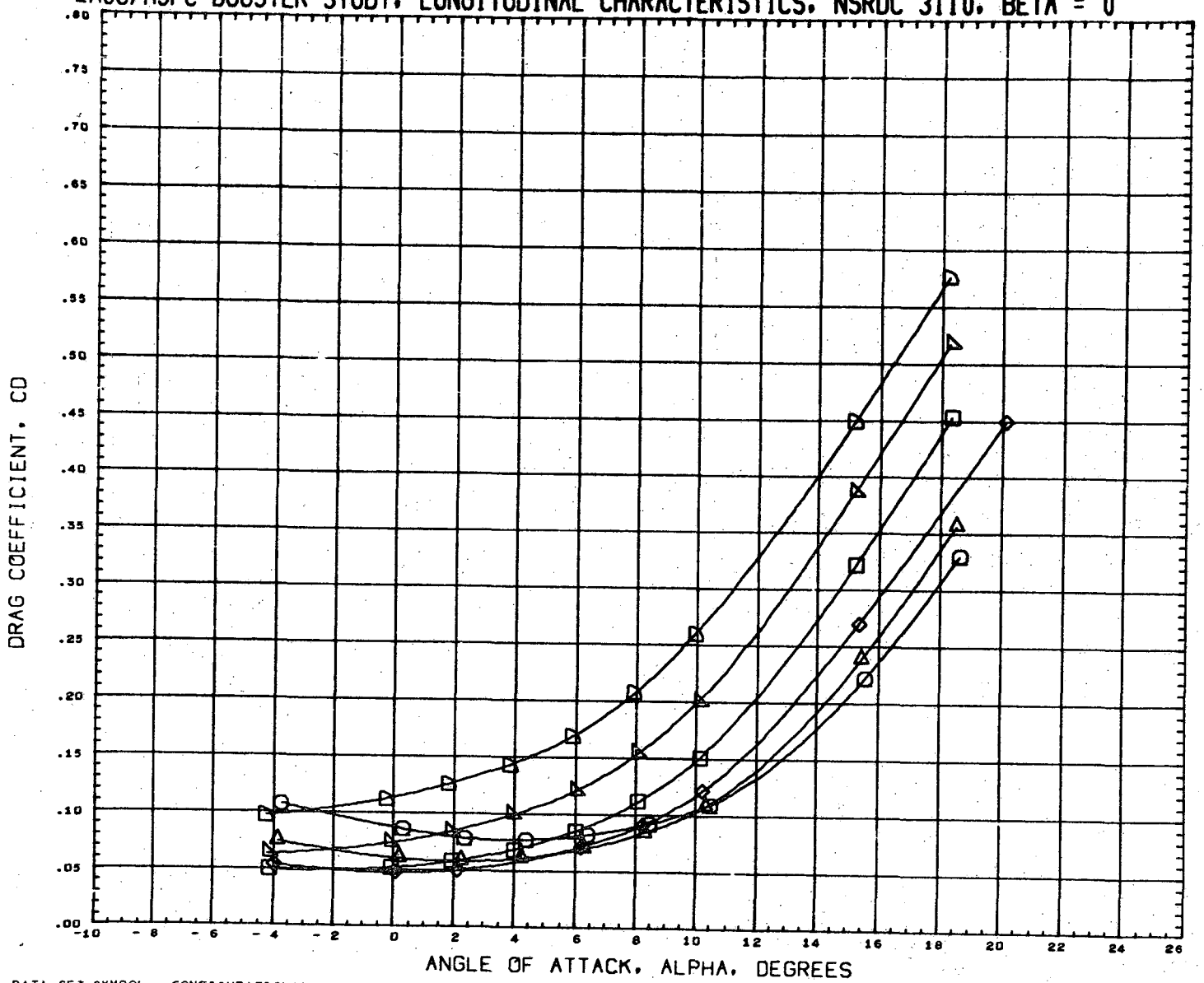

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MACH 0.361

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0.000	0.000	3.000	1.000
10.000	0.000	3.000	1.000
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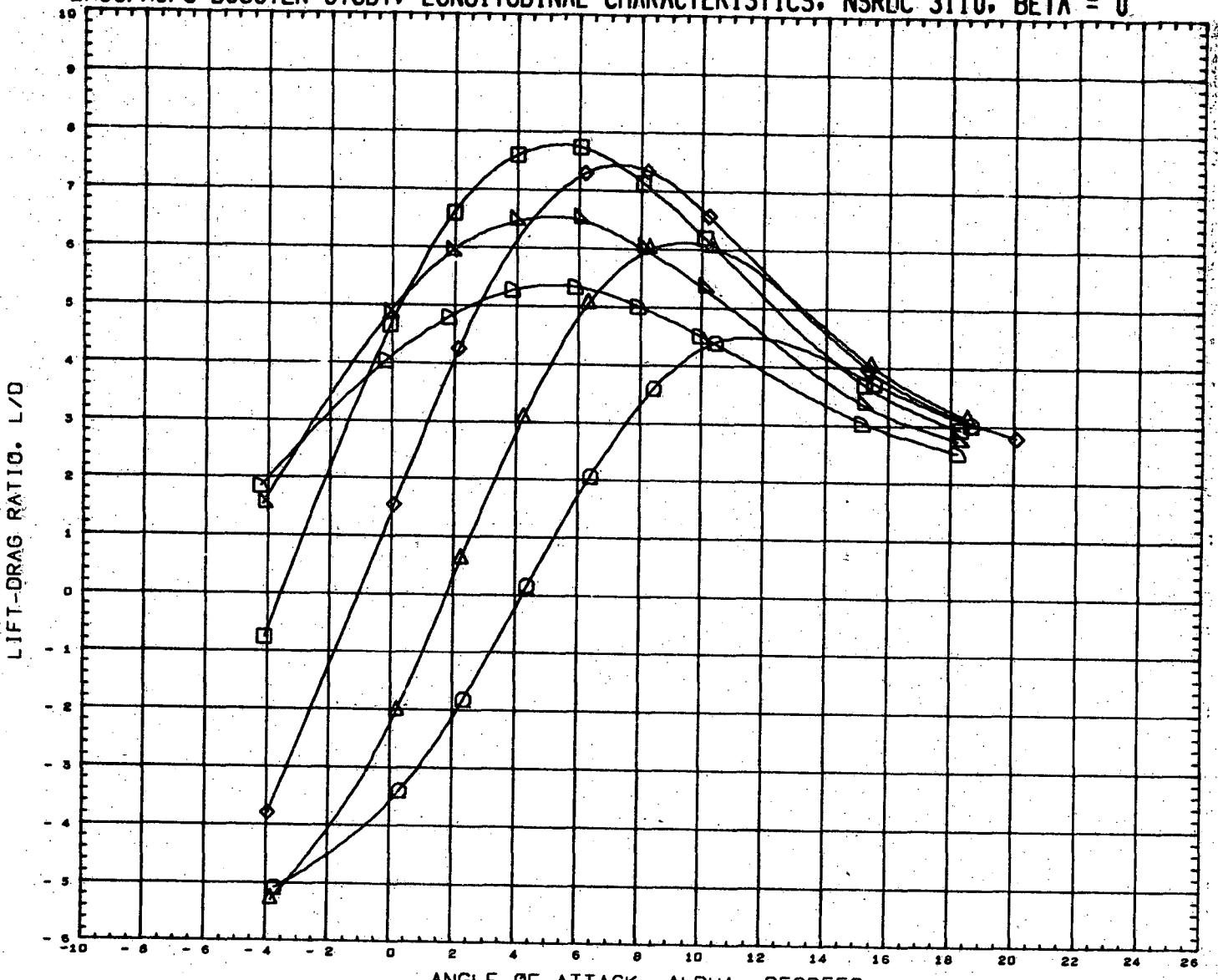

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(RN2365)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
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MACH 0.381

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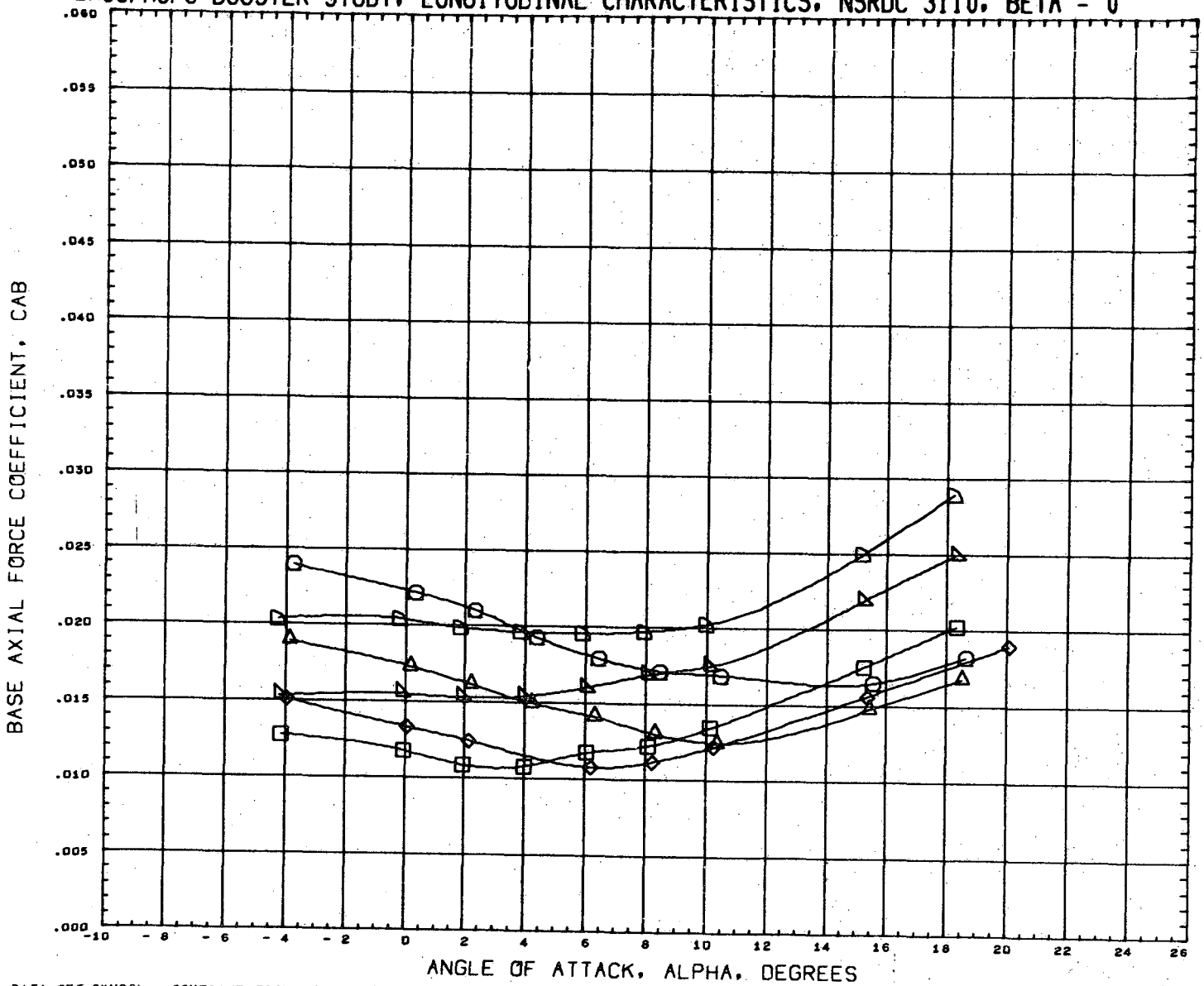

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(RN2377)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
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-10.000	0.000	3.000	1.000
0.000	0.000	3.000	1.000
10.000	0.000	3.000	1.000
20.000	0.000	3.000	1.000
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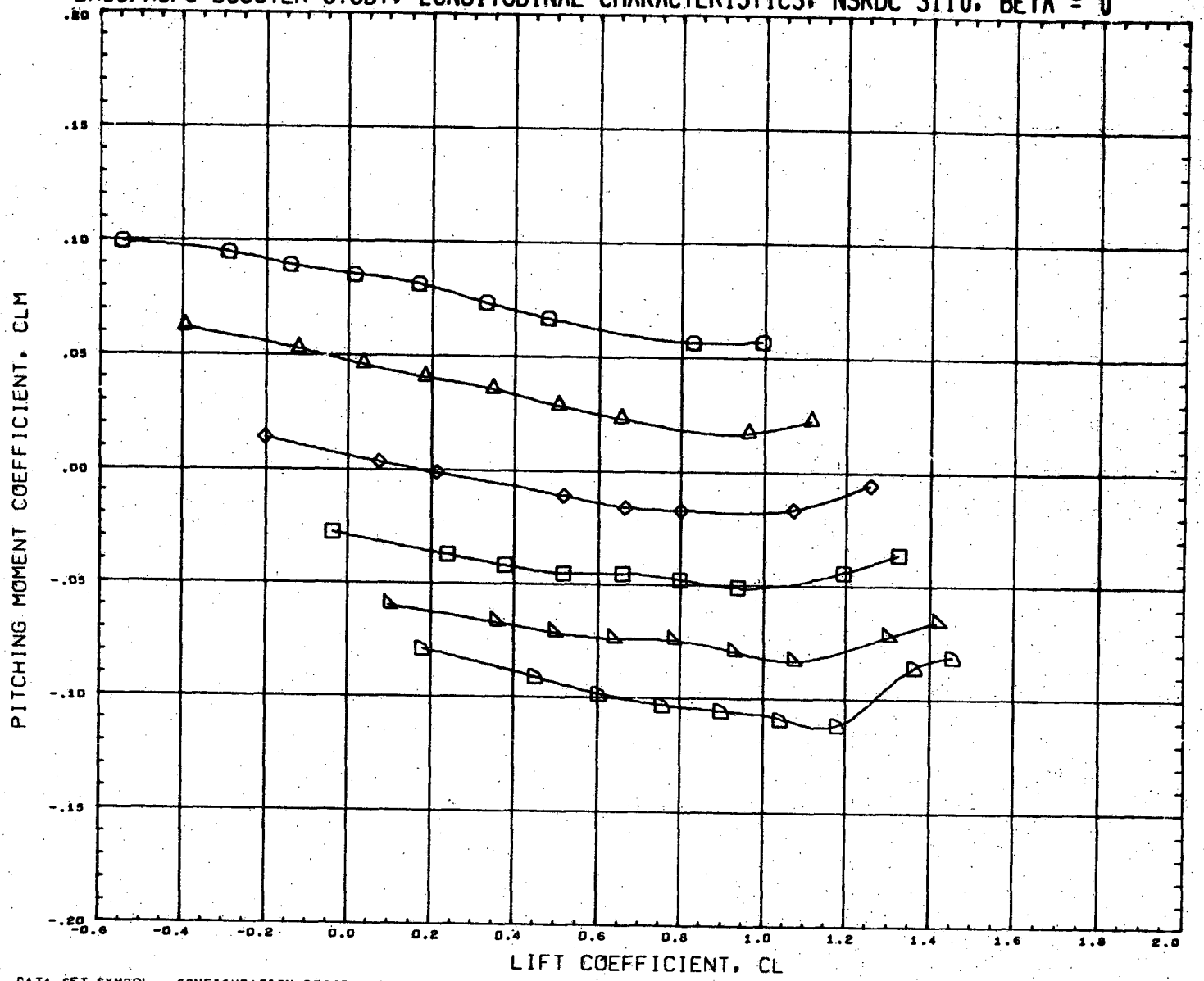

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(RN2001)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2353)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2365)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2377)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

MACH 0.381

ELEVTR	CANARD	INCIDC	CNDFOS
-20.000	0.000	3.000	1.000
-10.000	0.000	3.000	1.000
0.000	0.000	3.000	1.000
10.000	0.000	3.000	1.000
20.000	0.000	3.000	1.000
30.000	0.000	3.000	1.000

REFERENCE INFORMATION

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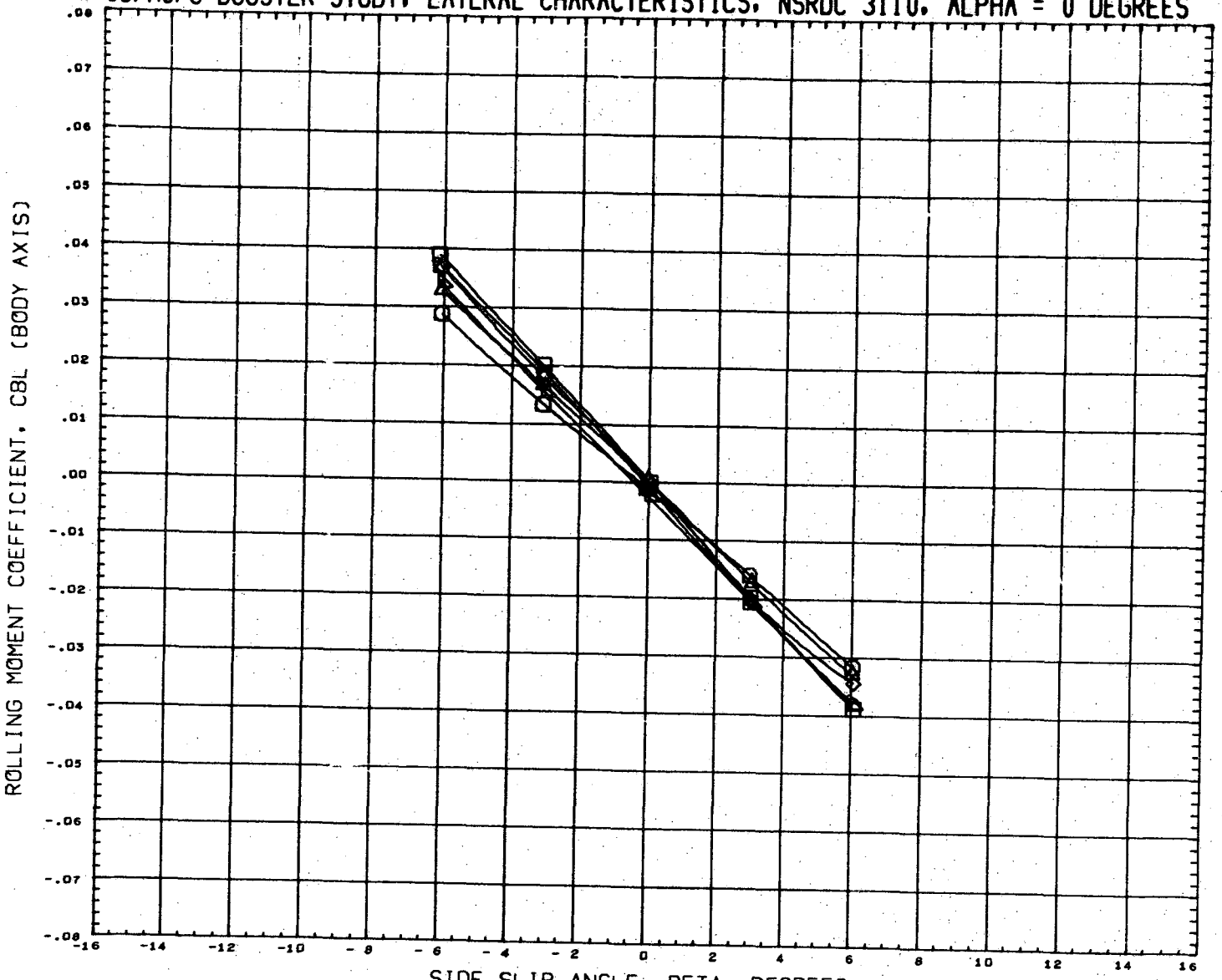
LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES



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(RN2330)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2342)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2002)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2354)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2366)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2378)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

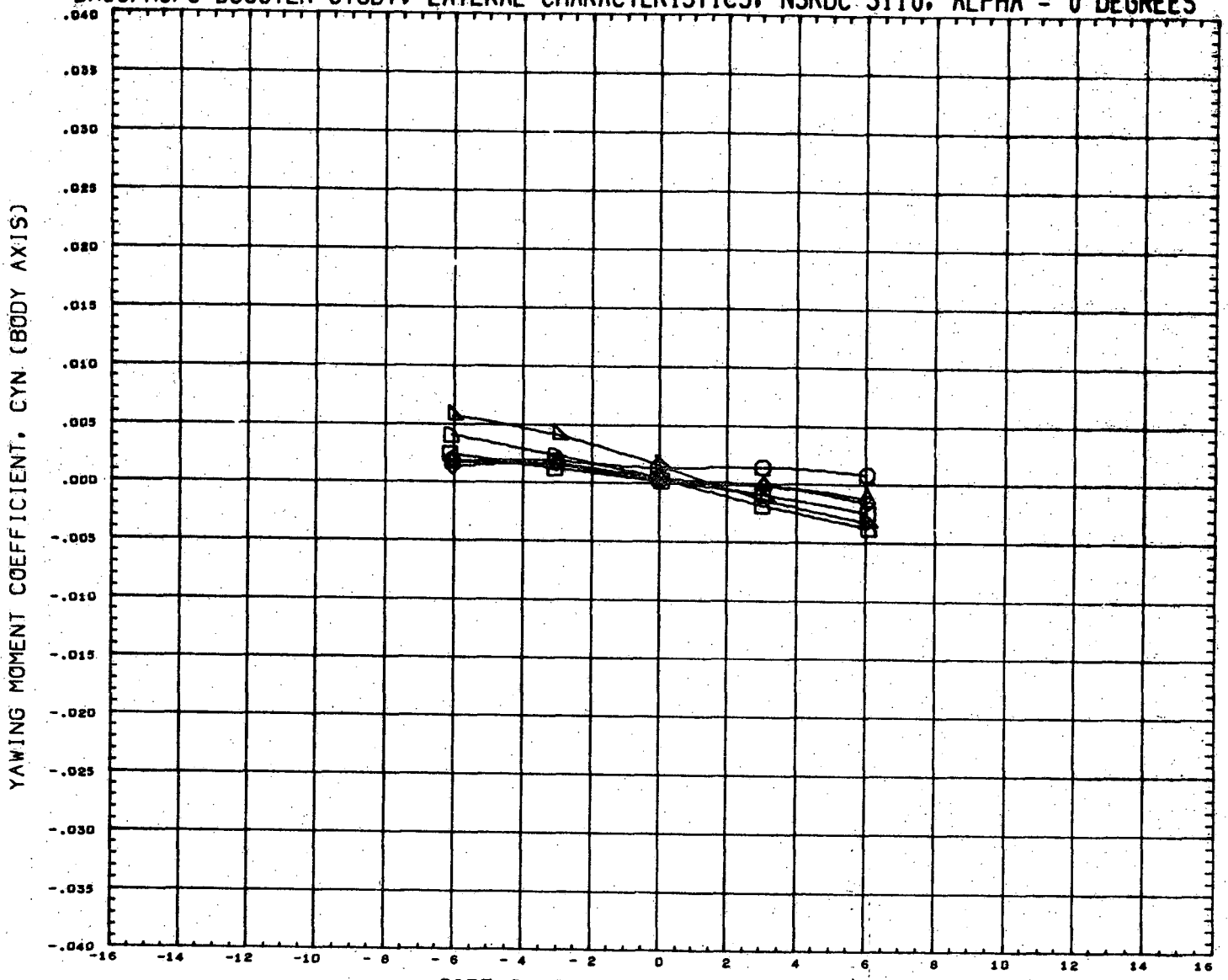
MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	0.000	3.000	1.000
-10.000	0.000	3.000	1.000
0.000	0.000	3.000	1.000
10.000	0.000	3.000	1.000
20.000	0.000	3.000	1.000
30.000	0.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES

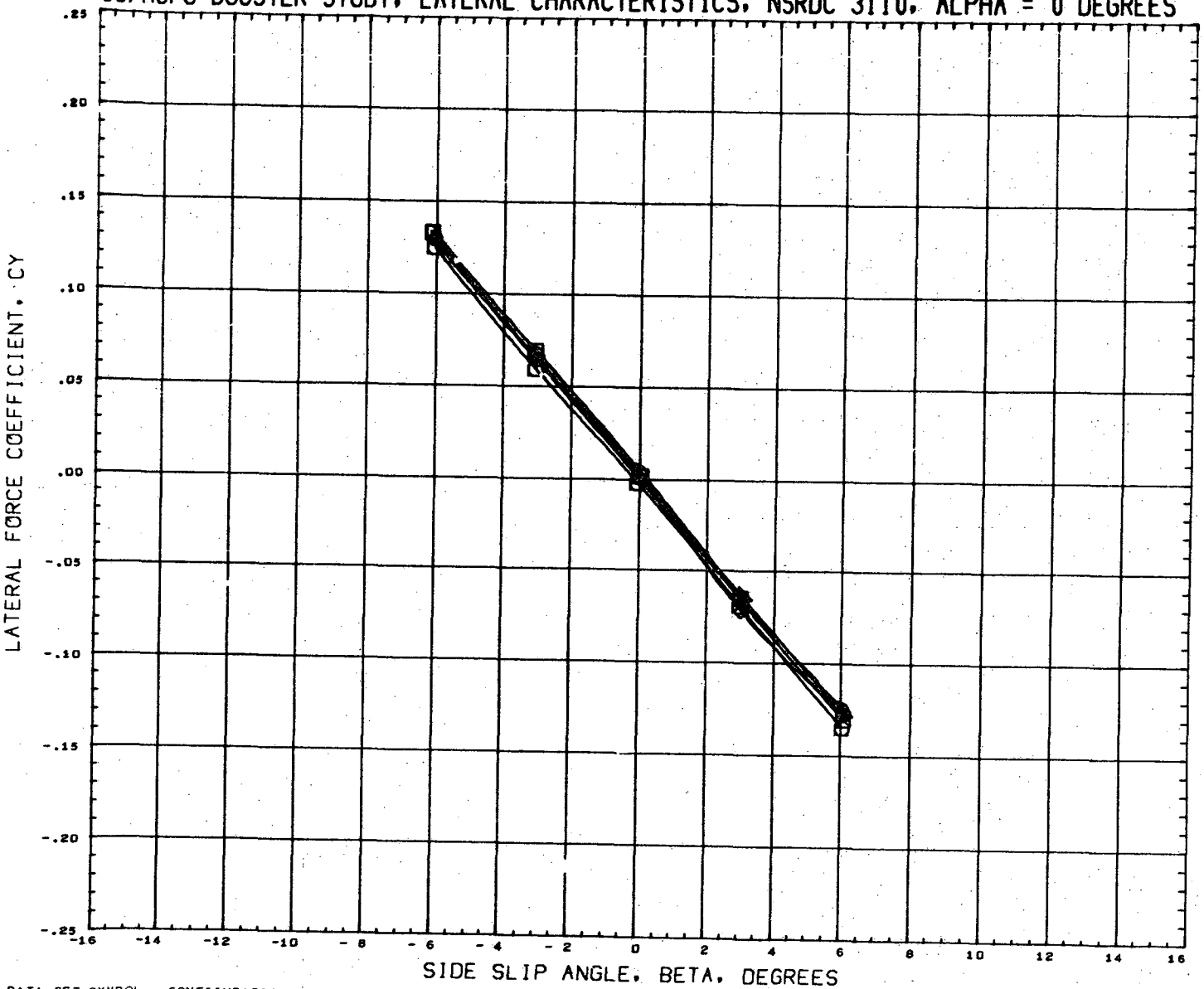


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVTR	CANARD	INCIDC	CNDPOS
(RN2330)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	-20.000	0.000	3.000	1.000
(RN2342)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	-10.000	0.000	3.000	1.000
(RN2002)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	0.000	0.000	3.000	1.000
(RN2354)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	10.000	0.000	3.000	1.000
(RN2366)	▽	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	20.000	0.000	3.000	1.000
(RN2378)	◁	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	30.000	0.000	3.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



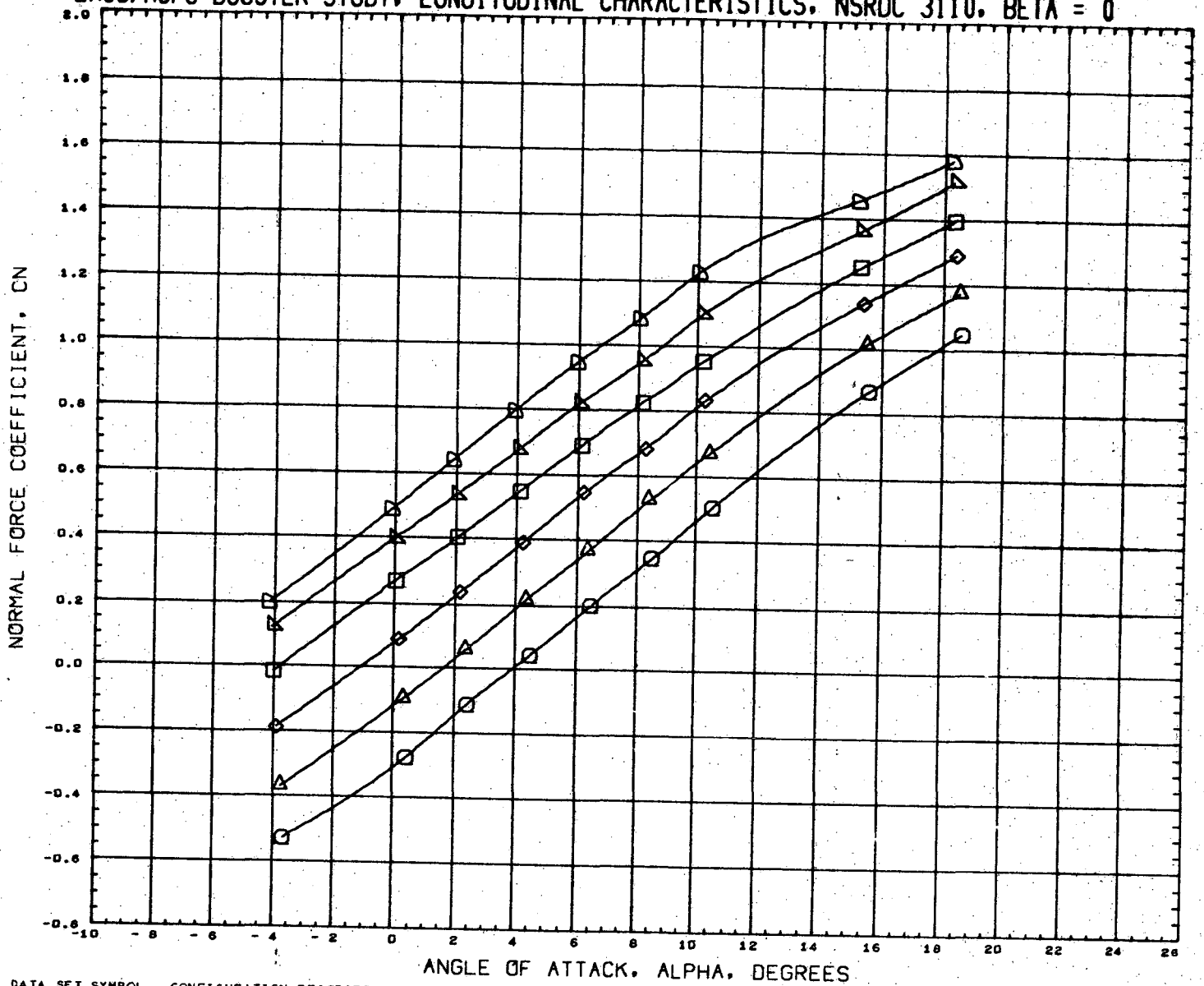
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2330)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2342)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2002)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2354)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2366)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2376)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	0.000	3.000	1.000
-10.000	0.000	3.000	1.000
0.000	0.000	3.000	1.000
10.000	0.000	3.000	1.000
20.000	0.000	3.000	1.000
30.000	0.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



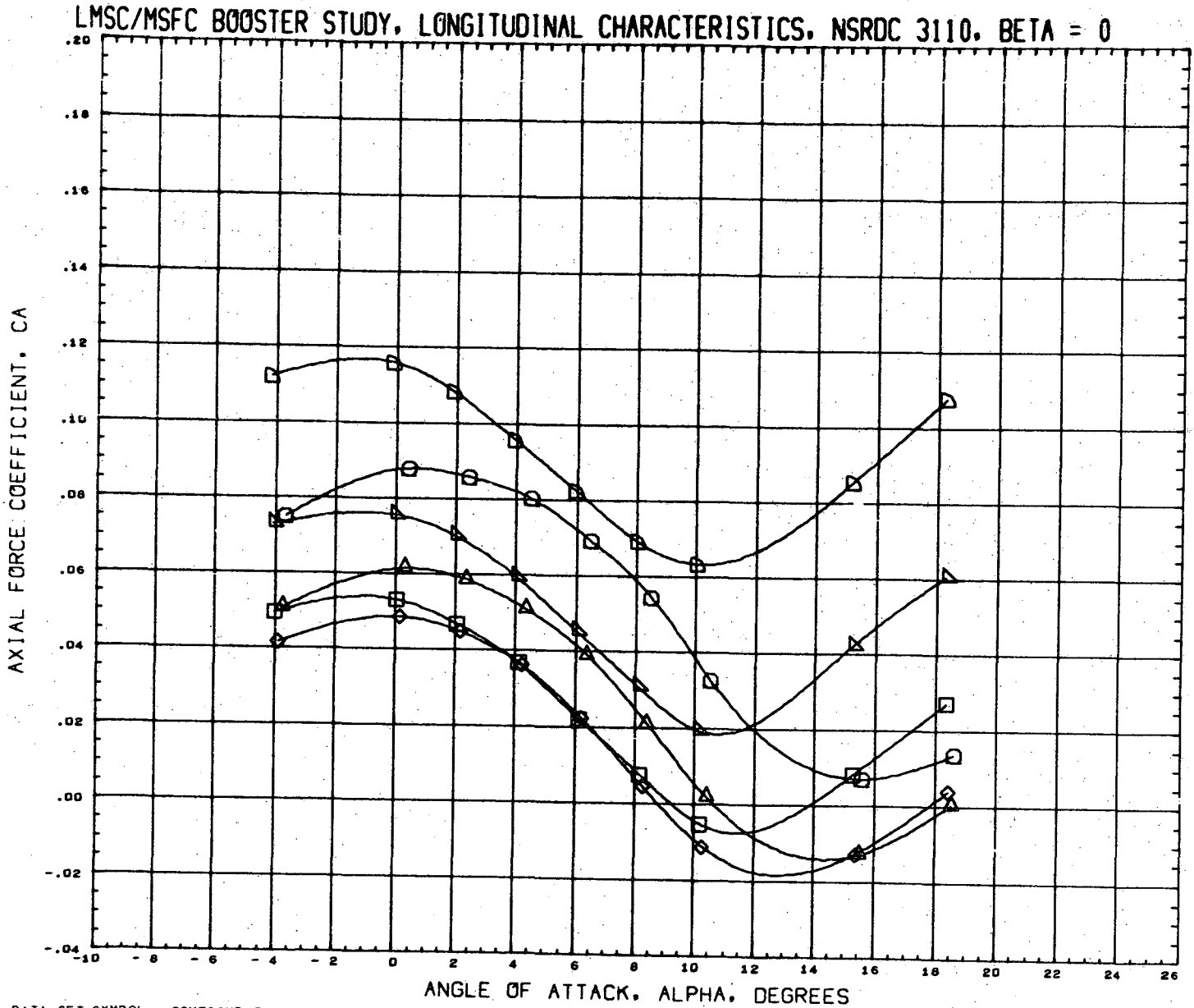
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2333)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2345)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2321)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2357)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2369)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2381)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.380

ELEVTR	CANARD	INCIDC	CNDFOS
-20.000	10.000	3.000	1.000
-10.000	10.000	3.000	1.000
0.000	10.000	3.000	1.000
10.000	10.000	3.000	1.000
20.000	10.000	3.000	1.000
30.000	10.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



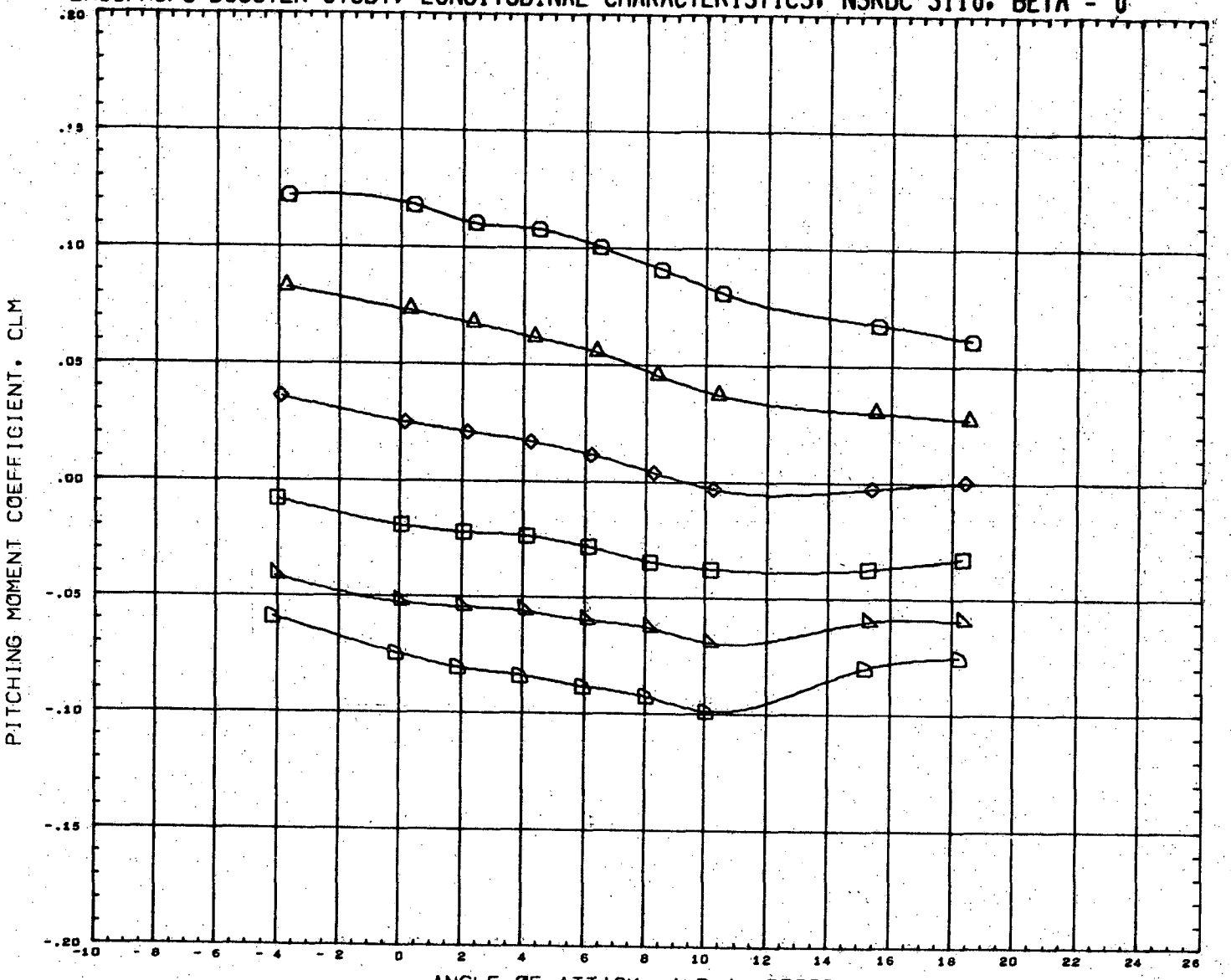
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2333)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2345)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2321)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2357)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2369)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN238.)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.380

ELEVTR	CANARD	INCIDC	CNDFOS
-20.000	10.000	3.000	1.000
-10.000	10.000	3.000	1.000
0.000	10.000	3.000	1.000
10.000	10.000	3.000	1.000
20.000	10.000	3.000	1.000
30.000	10.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



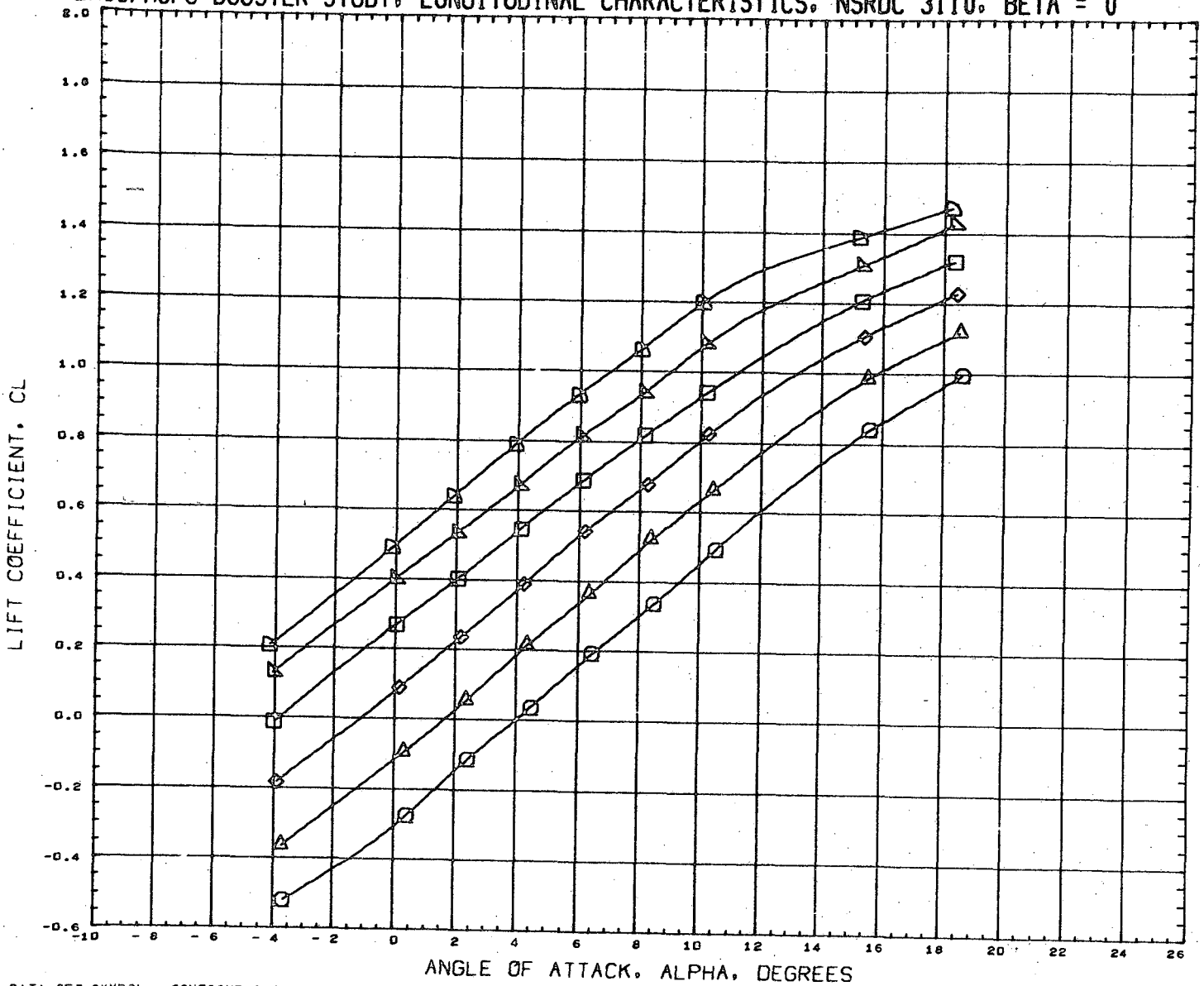
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2333)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2345)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2321)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2357)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)	▷	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.380

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	10.000	3.000	1.000
-10.000	10.000	3.000	1.000
0.000	10.000	3.000	1.000
10.000	10.000	3.000	1.000
20.000	10.000	3.000	1.000
30.000	10.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



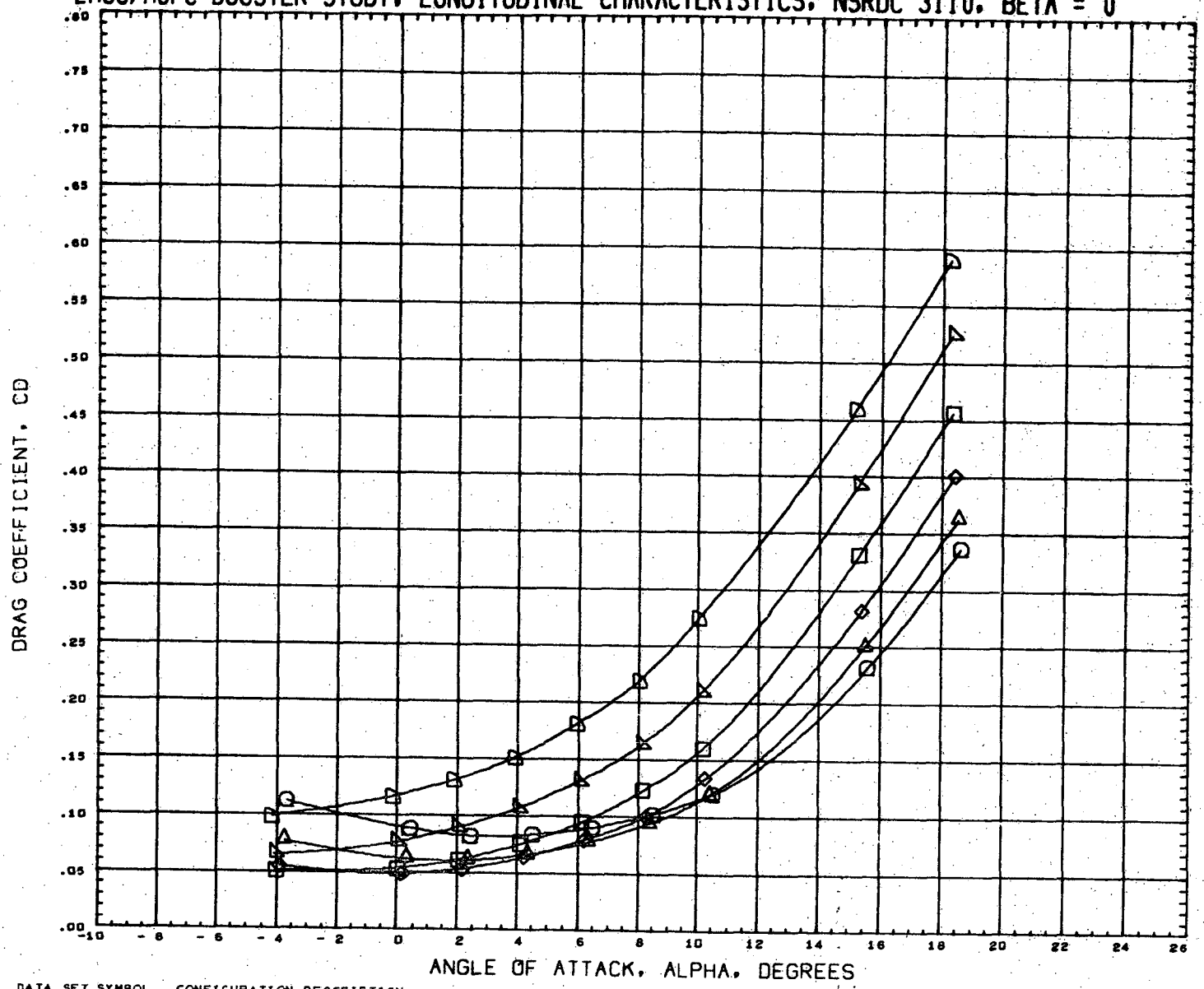
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2333)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2345)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2321)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2357)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2369)	▷	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2381)	D	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.380

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	10.000	3.000	1.000
-10.000	10.000	3.000	1.000
0.000	10.000	3.000	1.000
10.000	10.000	3.000	1.000
20.000	10.000	3.000	1.000
30.000	10.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



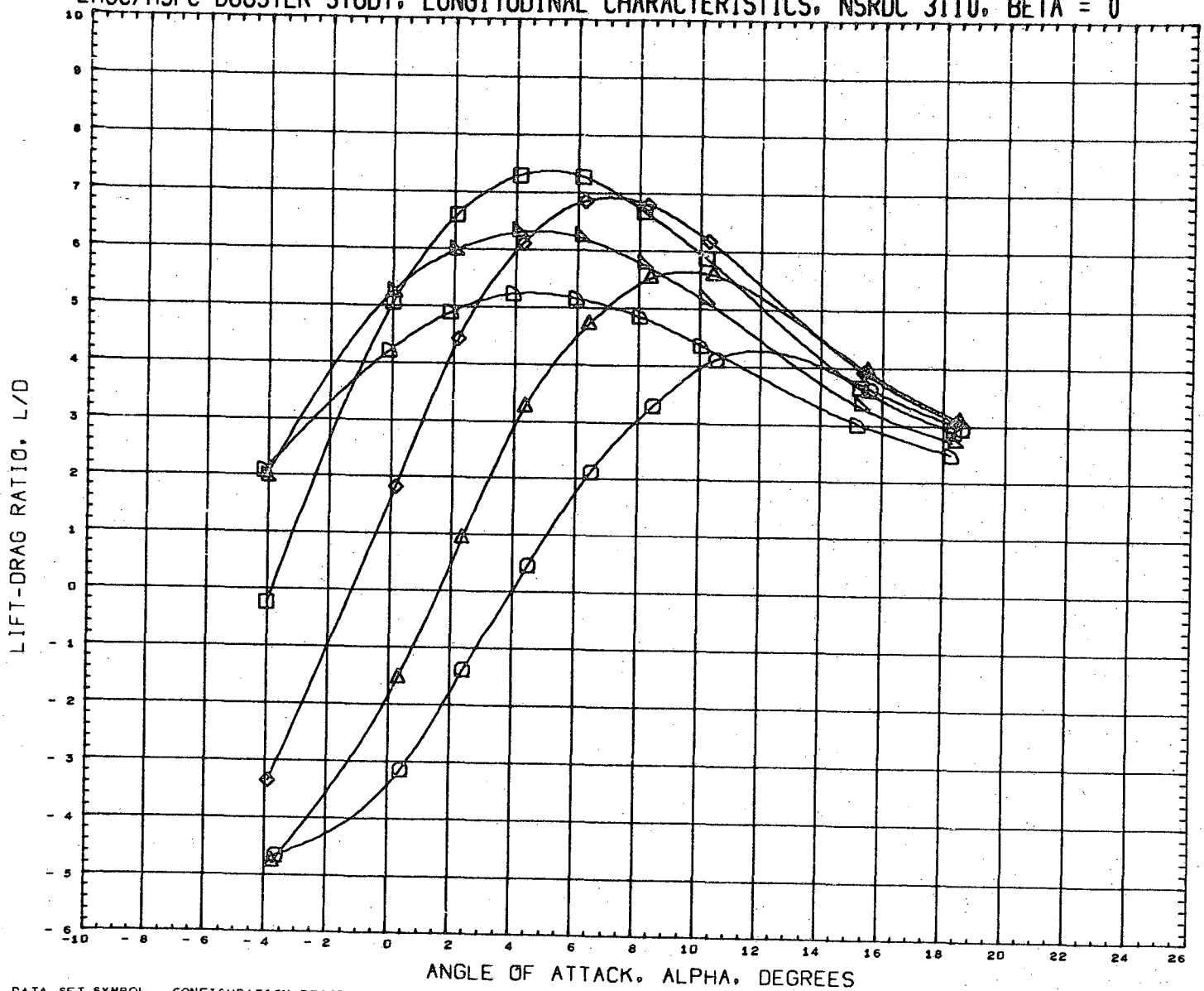
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2333)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2345)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2321)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2357)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2369)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.380

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	10.000	3.000	1.000
-10.000	10.000	3.000	1.000
0.000	10.000	3.000	1.000
10.000	10.000	3.000	1.000
20.000	10.000	3.000	1.000
30.000	10.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



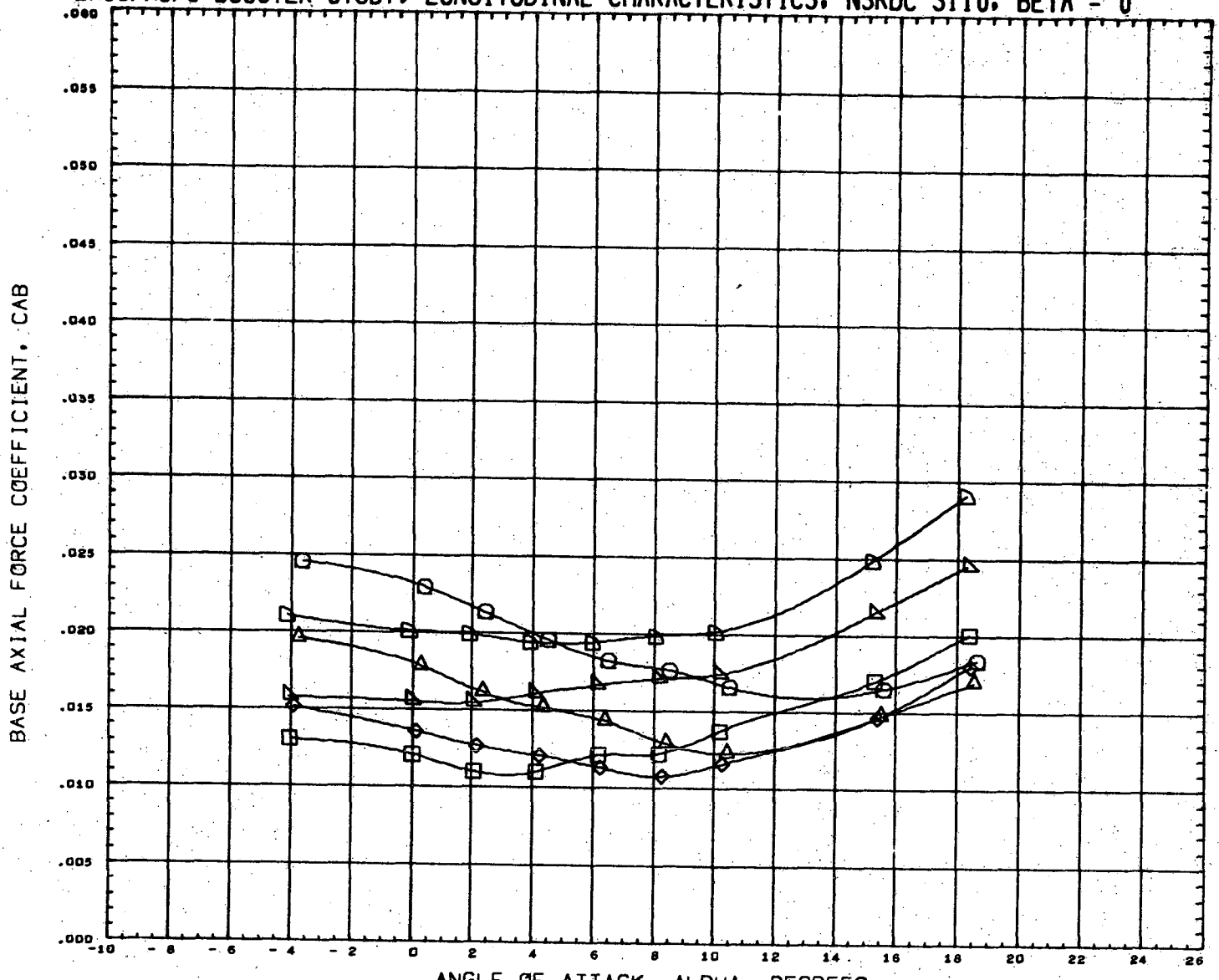
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2333)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2345)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2321)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2357)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2369)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2331)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.380

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	10.000	3.000	1.000
-10.000	10.000	3.000	1.000
0.000	10.000	3.000	1.000
10.000	10.000	3.000	1.000
20.000	10.000	3.000	1.000
30.000	10.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



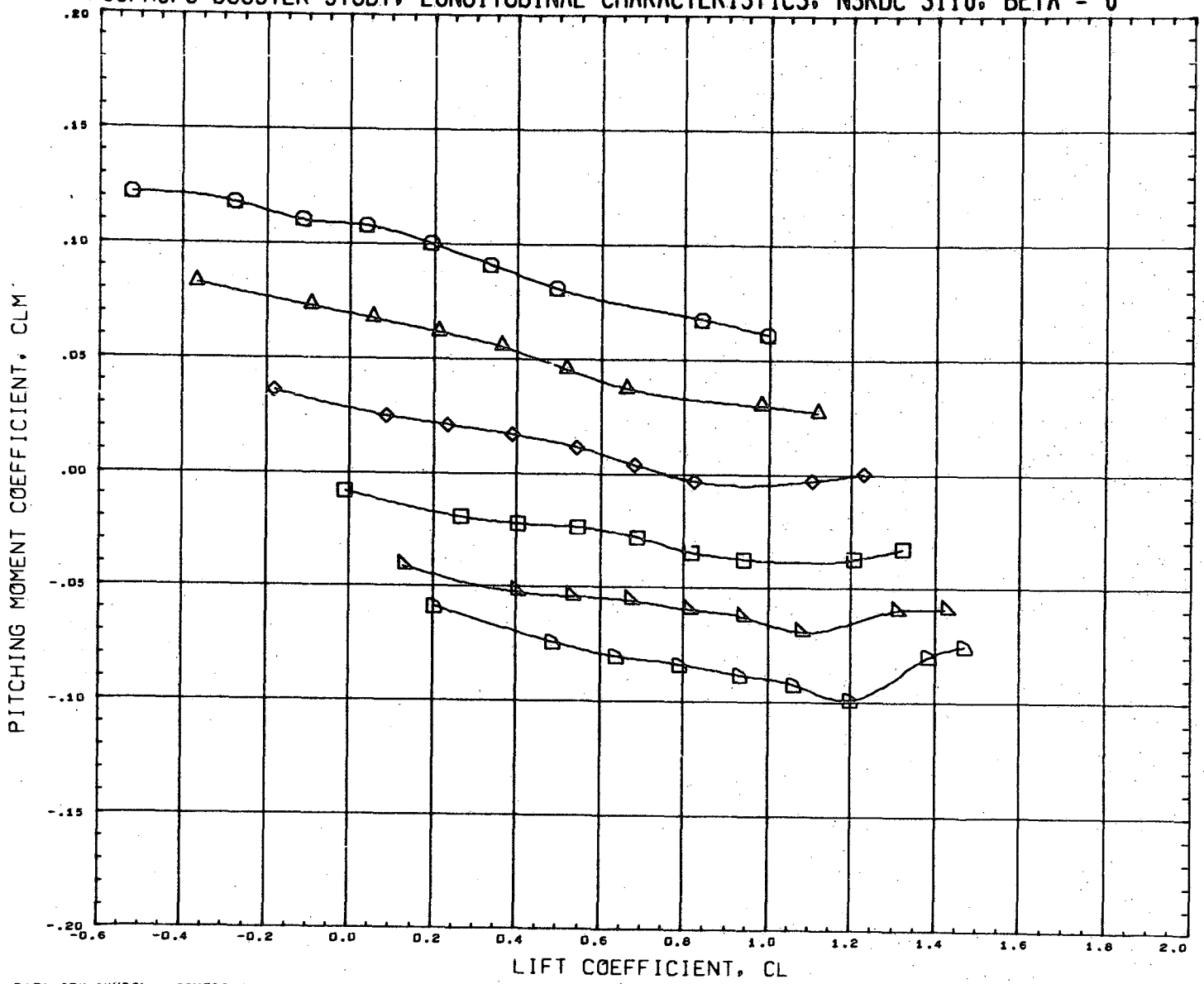
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2333)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2345)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2321)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2357)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2369)	▽	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2381)	▷	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.380

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	10.000	3.000	1.000
-10.000	10.000	3.000	1.000
0.000	10.000	3.000	1.000
10.000	10.000	3.000	1.000
20.000	10.000	3.000	1.000
30.000	10.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



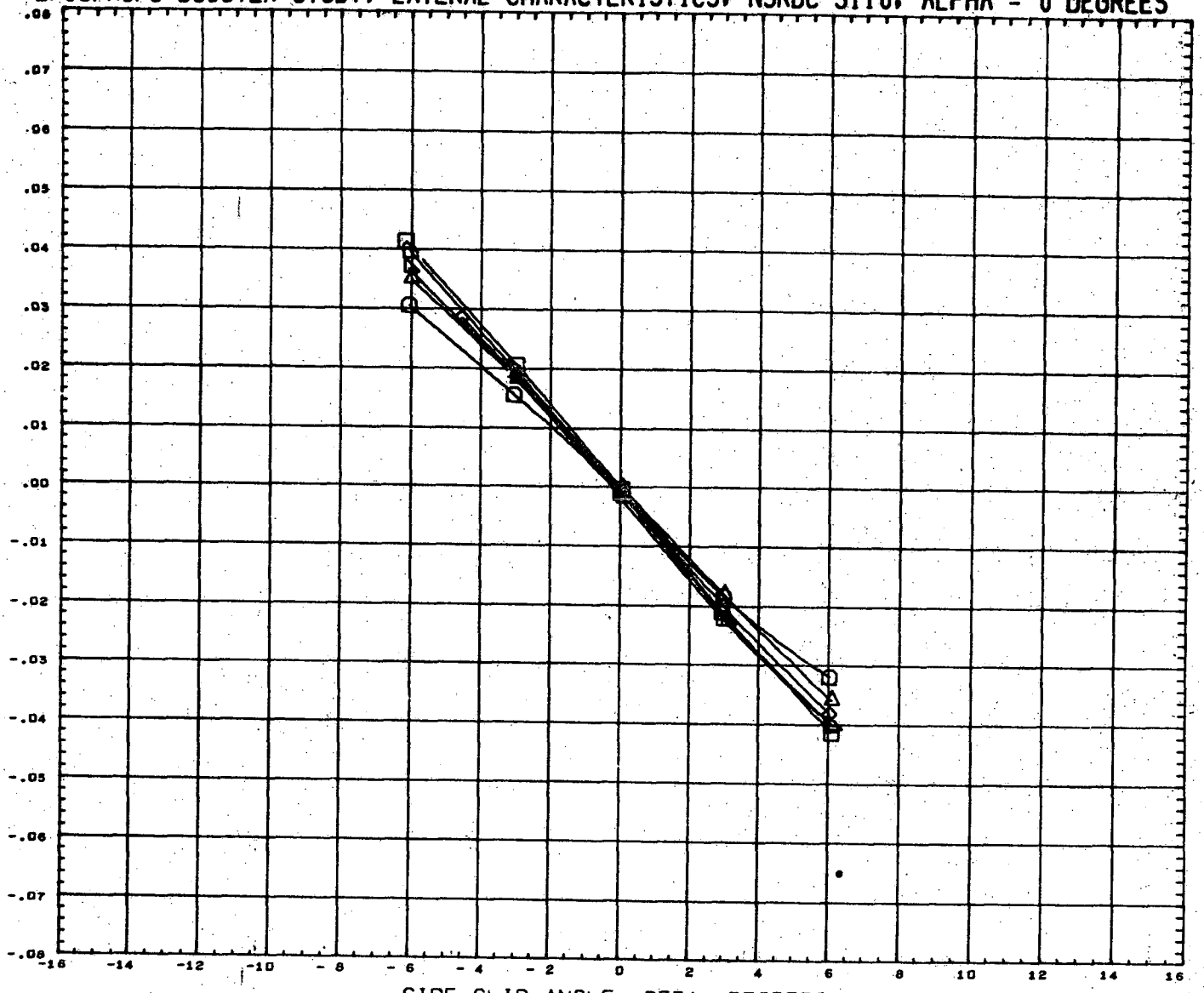
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2333)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2345)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2321)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2357)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2369)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.380

ELEVTR	CANARD	INCIDC	CNDFOS
-20.000	10.000	3.000	1.000
-10.000	10.000	3.000	1.000
0.000	10.000	3.000	1.000
10.000	10.000	3.000	1.000
20.000	10.000	3.000	1.000
30.000	10.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



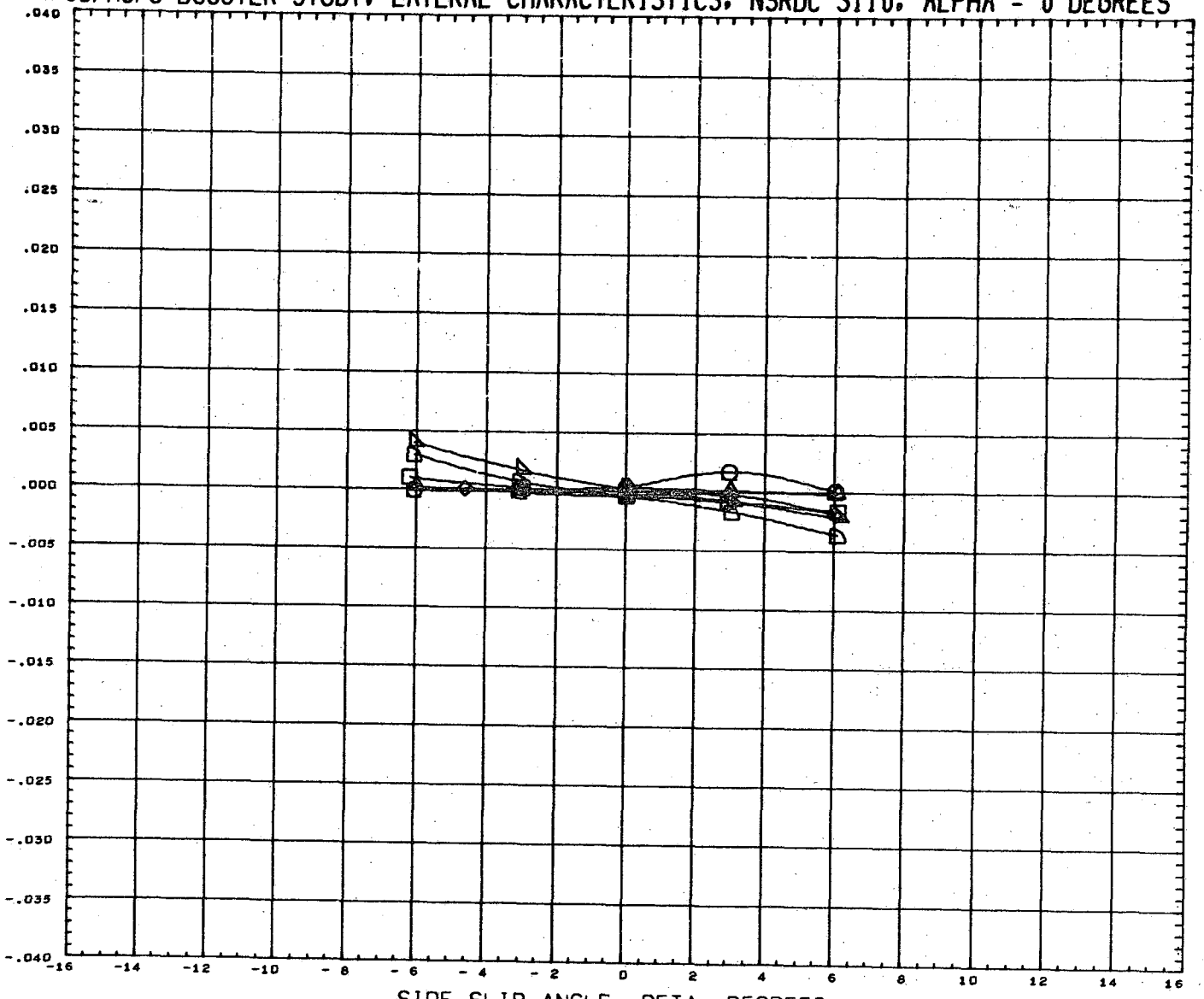
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2334)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2346)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2322)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2358)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2370)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2382)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.361

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	10.000	3.000	1.000
-10.000	10.000	3.000	1.000
0.000	10.000	3.000	1.000
10.000	10.000	3.000	1.000
20.000	10.000	3.000	1.000
30.000	10.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2334)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2346)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2322)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2358)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2370)	▽	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2362)	▷	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

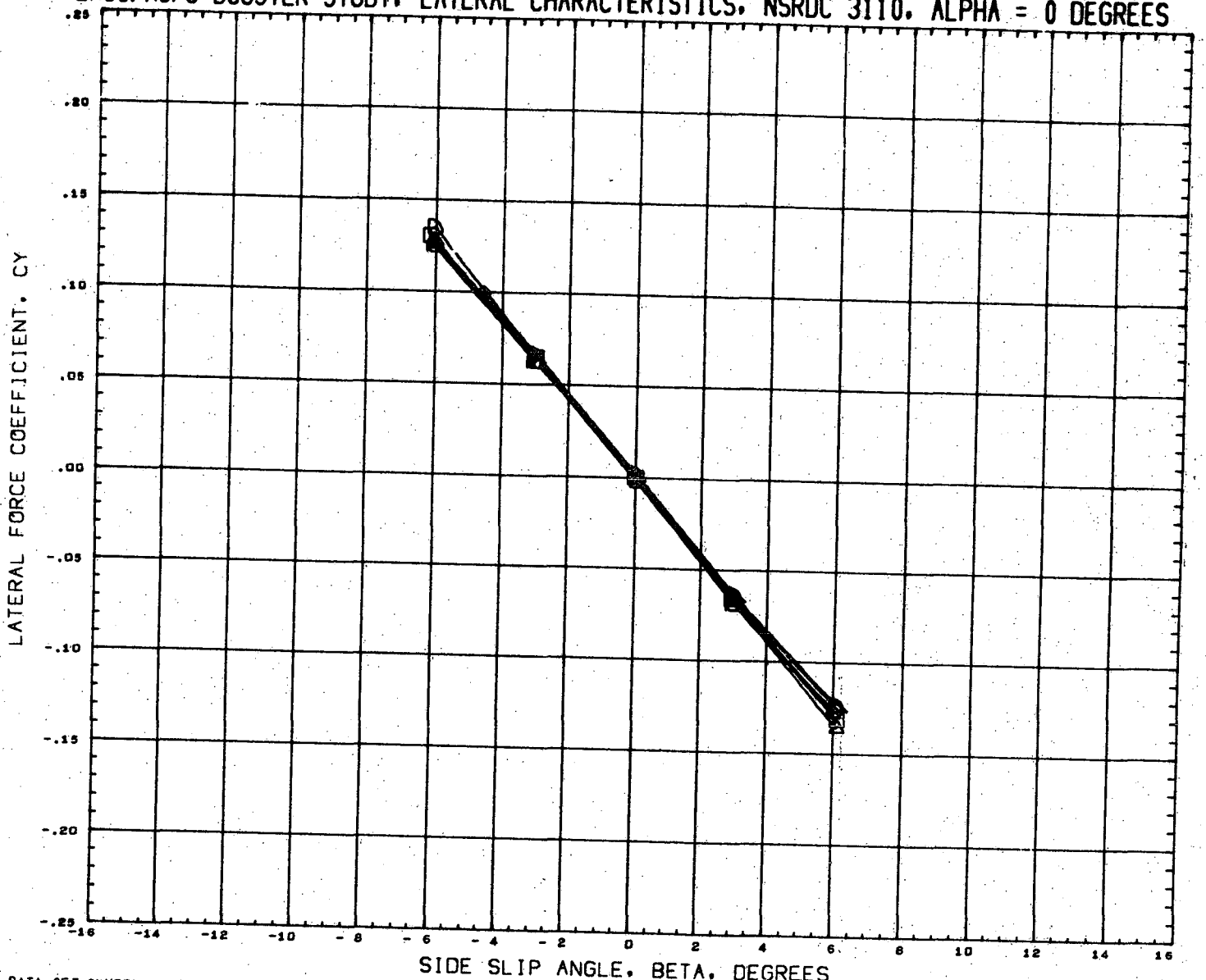
MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	10.000	3.000	1.000
-10.000	10.000	3.000	1.000
0.000	10.000	3.000	1.000
10.000	10.000	3.000	1.000
20.000	10.000	3.000	1.000
30.000	10.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2334)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2346)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2322)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2358)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2370)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2362)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

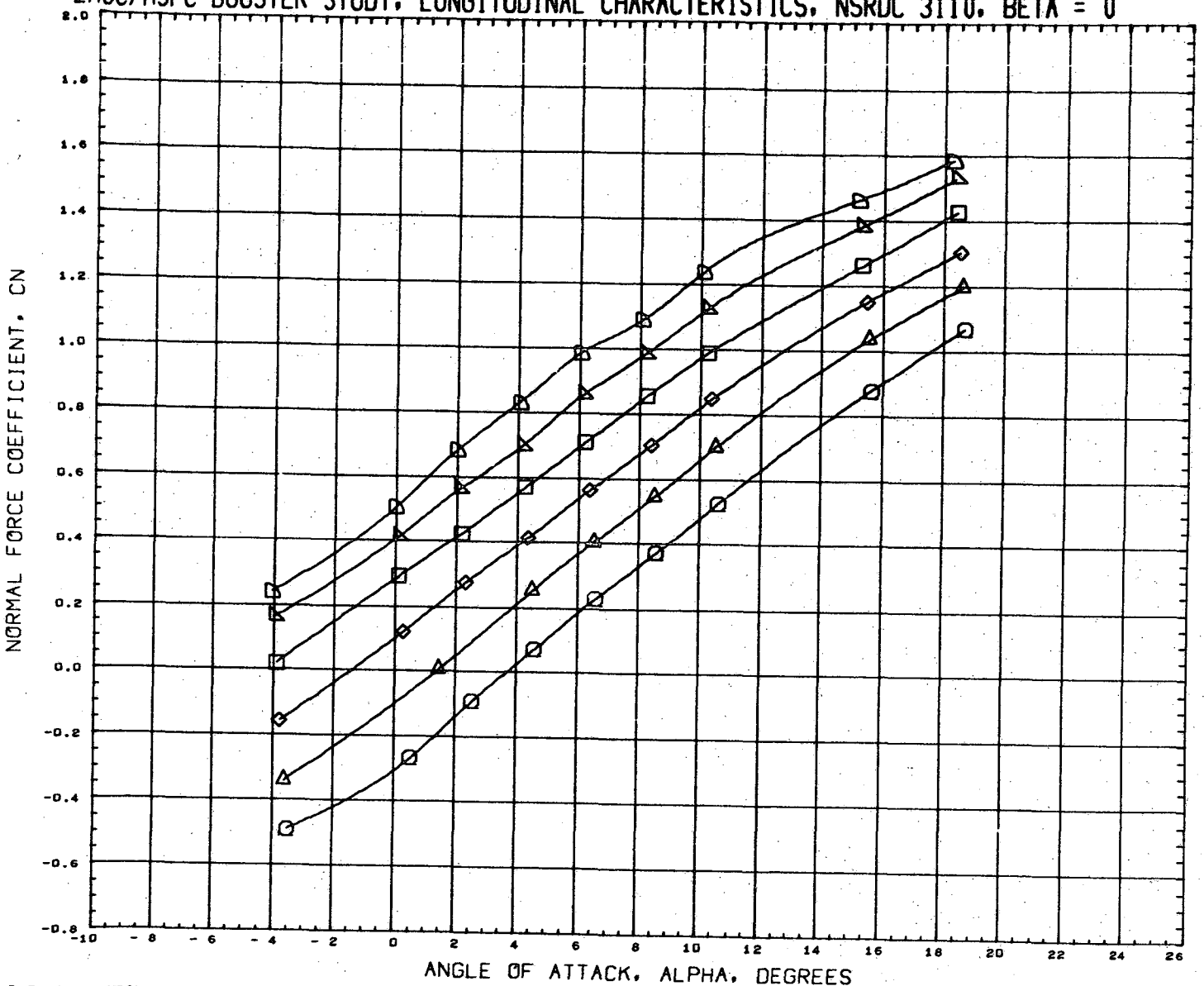
MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	10.000	3.000	1.000
-10.000	10.000	3.000	1.000
0.000	10.000	3.000	1.000
10.000	10.000	3.000	1.000
20.000	10.000	3.000	1.000
30.000	10.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



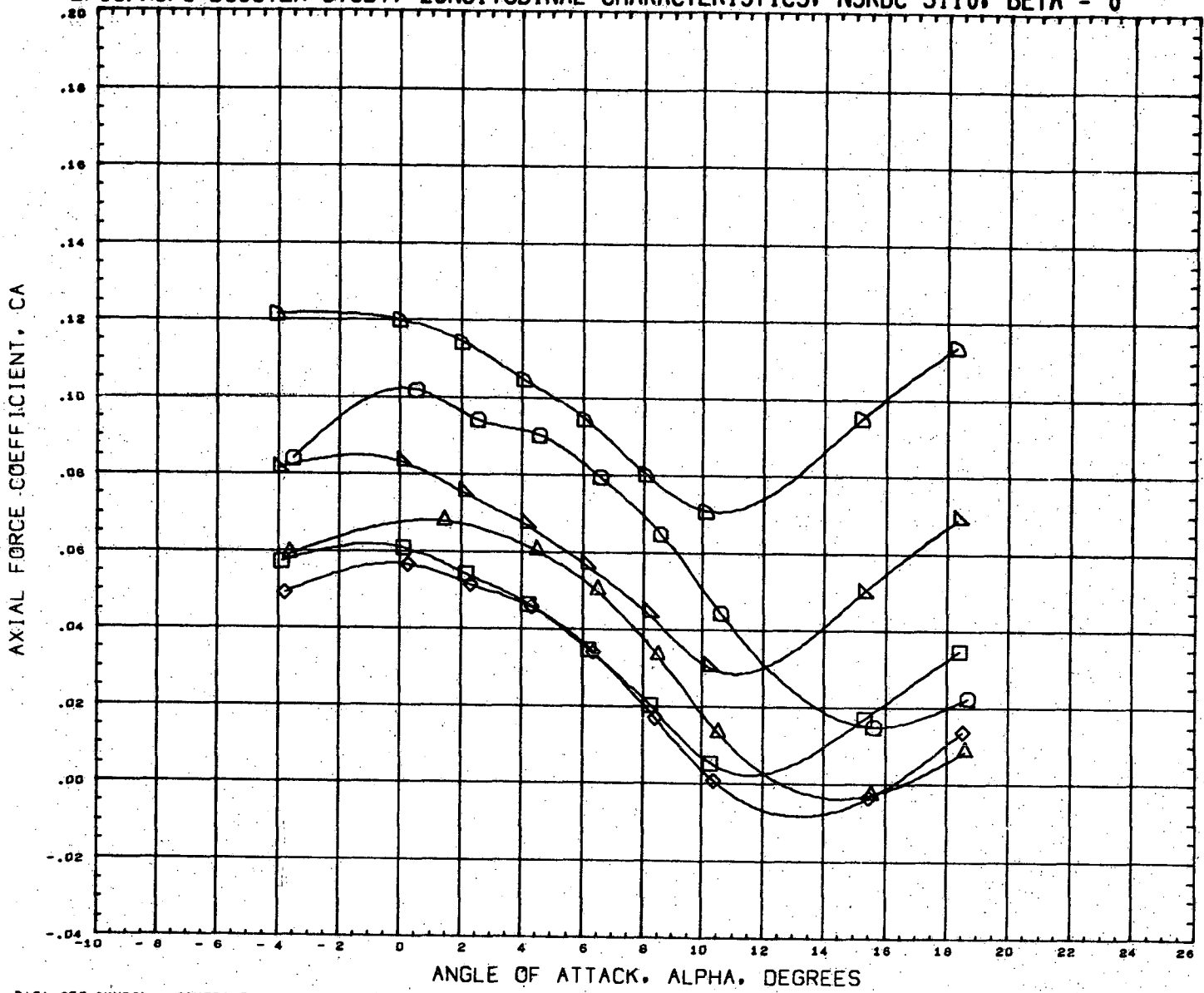
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2337)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN236*)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN238.)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.381

ELEVTR	CANARD	INCIDC	CNDFOS
-20.000	20.000	3.000	1.000
-10.000	20.000	3.000	1.000
0.000	20.000	3.000	1.000
10.000	20.000	3.000	1.000
20.000	20.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

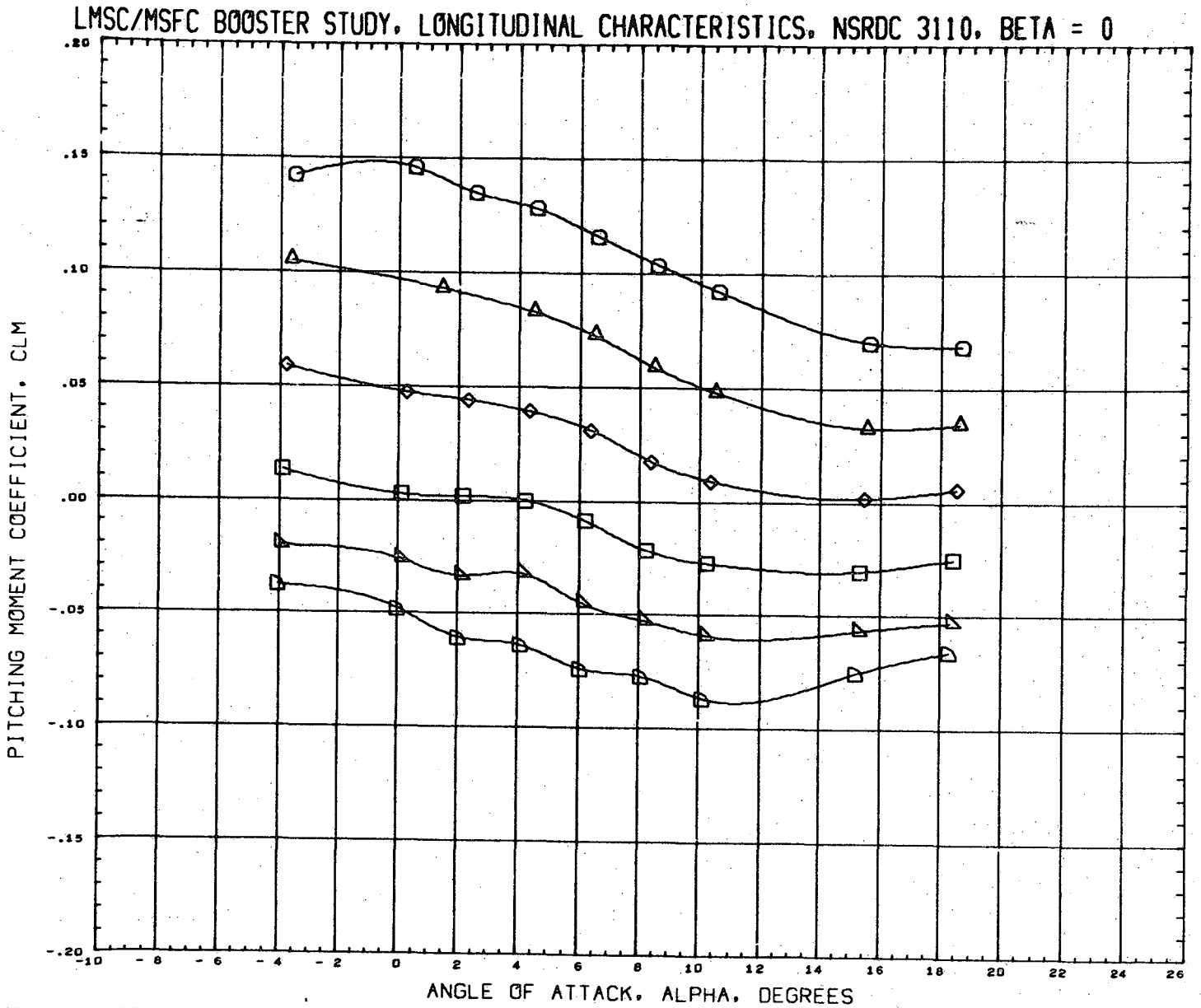


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2337)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN238.)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	20.000	3.000	1.000
-10.000	20.000	3.000	1.000
0.000	20.000	3.000	1.000
10.000	20.000	3.000	1.000
20.000	20.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



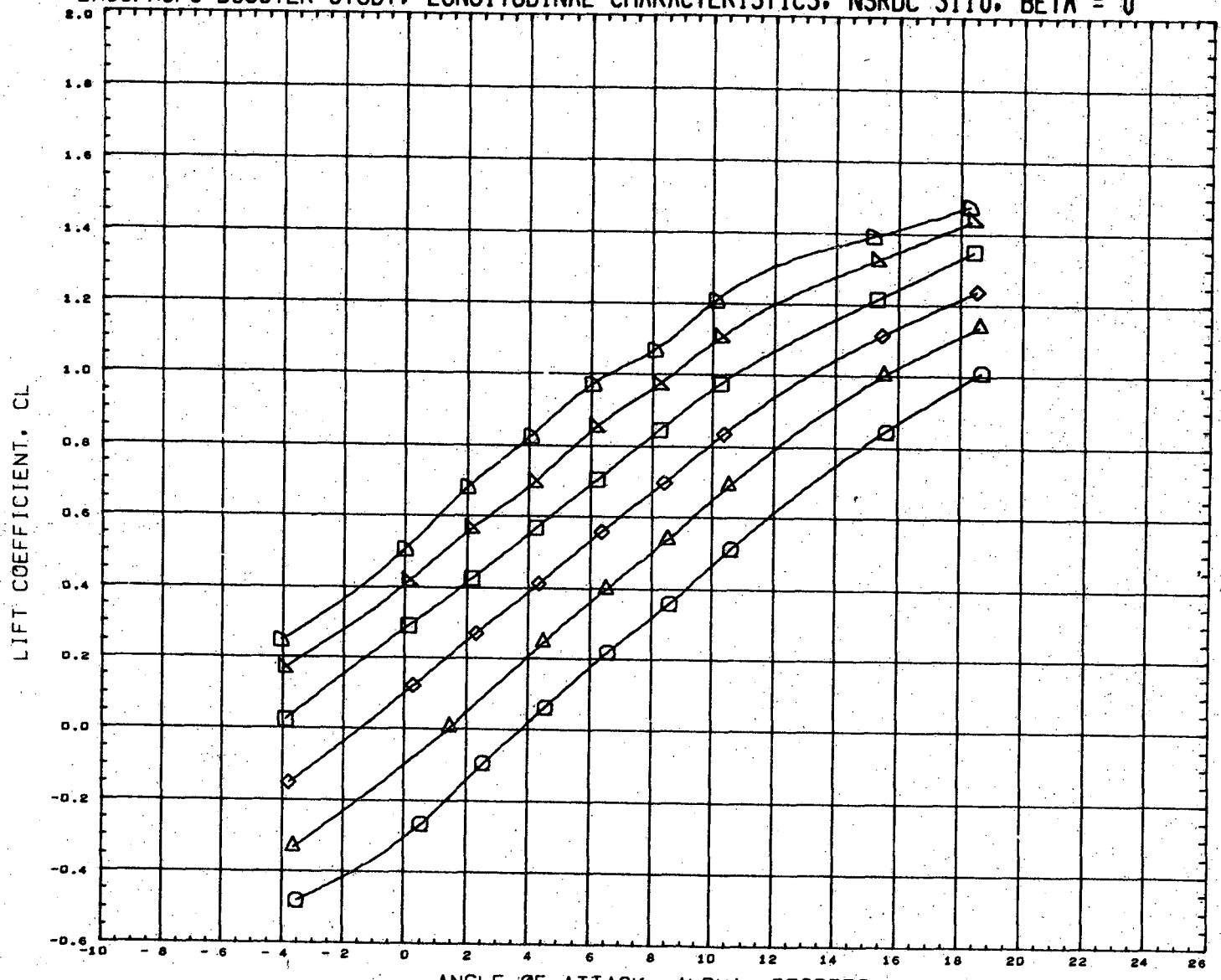
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2337)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2385)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.361

ELEVTR	CANARD	INCIDC	CNDFOS
-20.000	20.000	3.000	1.000
-10.000	20.000	3.000	1.000
0.000	20.000	3.000	1.000
10.000	20.000	3.000	1.000
20.000	20.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



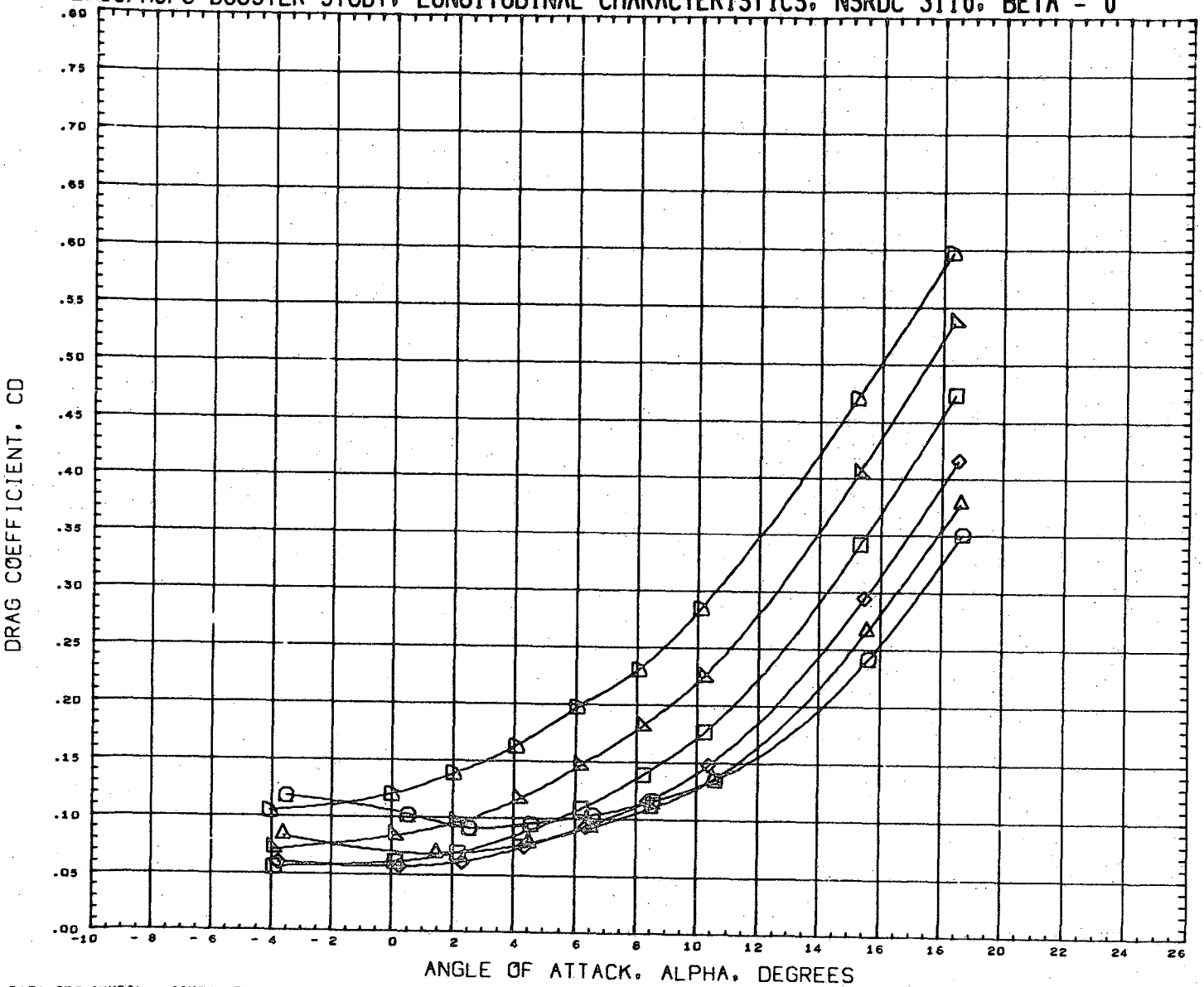
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2337)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2385)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	20.000	3.000	1.000
-10.000	20.000	3.000	1.000
0.000	20.000	3.000	1.000
10.000	20.000	3.000	1.000
20.000	20.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



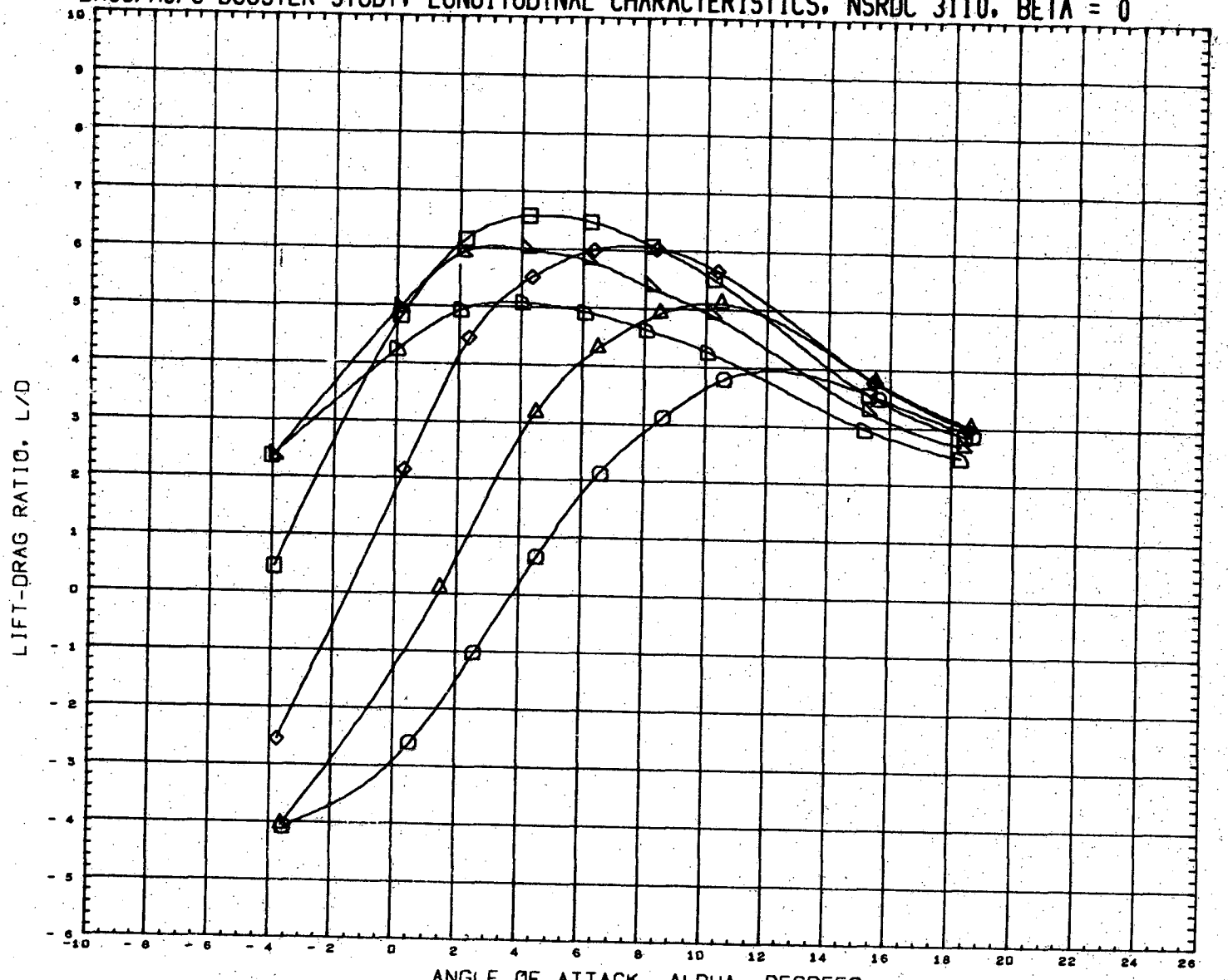
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2337)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)	▷	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2385)	▷	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.361

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	20.000	3.000	1.000
-10.000	20.000	3.000	1.000
0.000	20.000	3.000	1.000
10.000	20.000	3.000	1.000
20.000	20.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



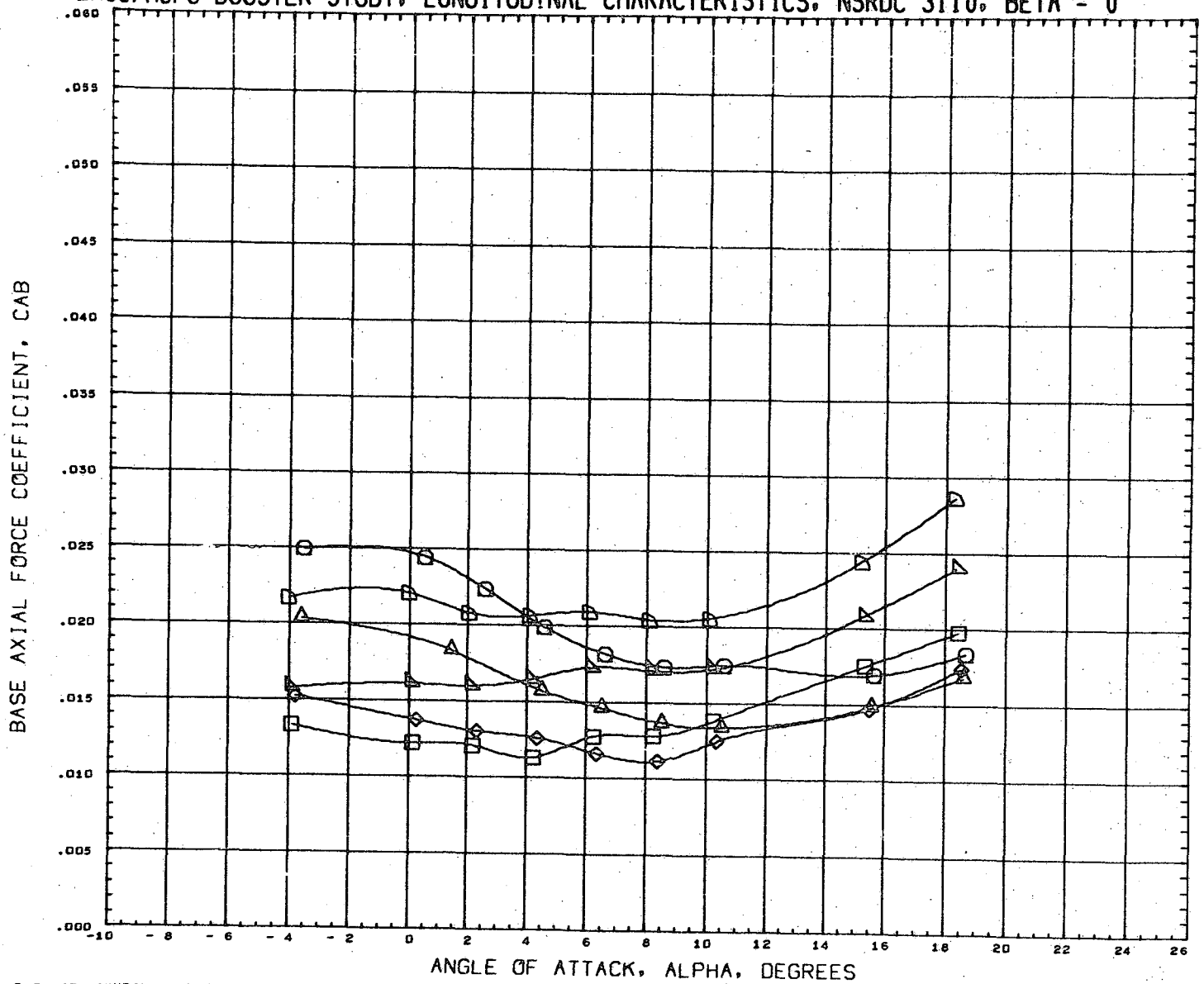
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2337)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2385)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.381

ELEVTR	CANARD	INCIDC	CNDFOS
-20.000	20.000	3.000	1.000
-10.000	20.000	3.000	1.000
0.000	20.000	3.000	1.000
10.000	20.000	3.000	1.000
20.000	20.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



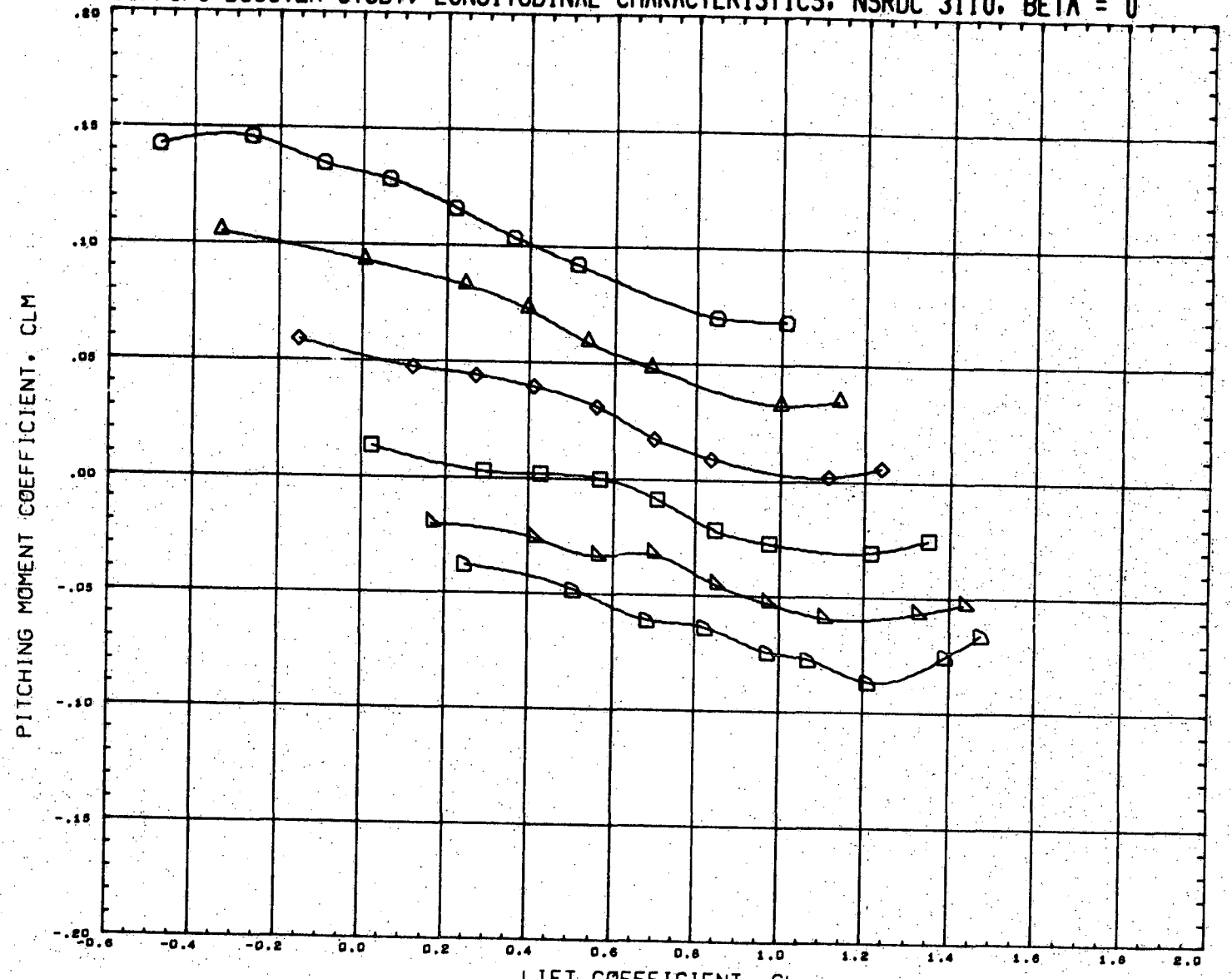
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2337)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)	▽	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2385)	◁	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	20.000	3.000	1.000
-10.000	20.000	3.000	1.000
0.000	20.000	3.000	1.000
10.000	20.000	3.000	1.000
20.000	20.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



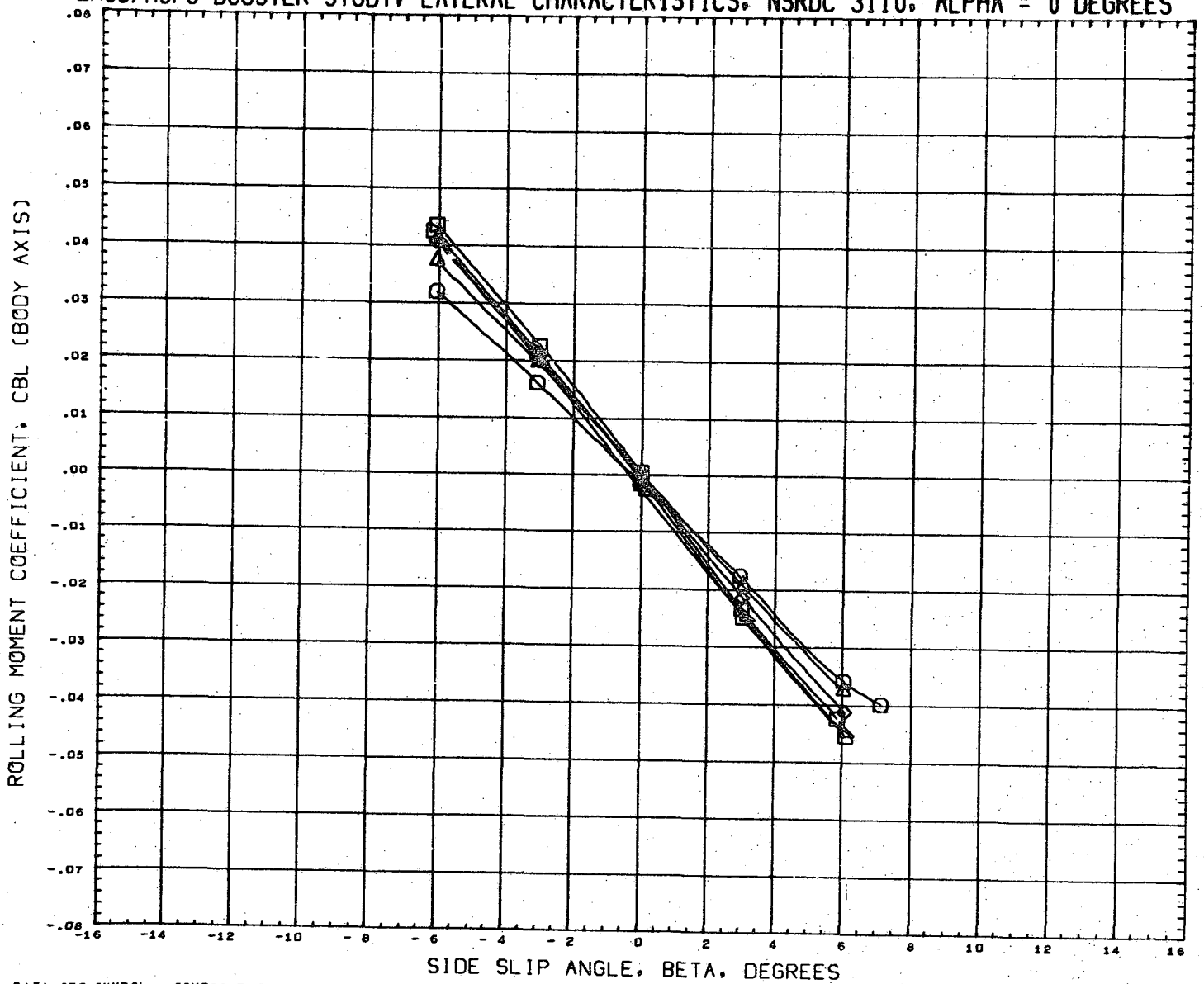
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2337)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2365)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.381

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	20.000	3.000	1.000
-10.000	20.000	3.000	1.000
0.000	20.000	3.000	1.000
10.000	20.000	3.000	1.000
20.000	20.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



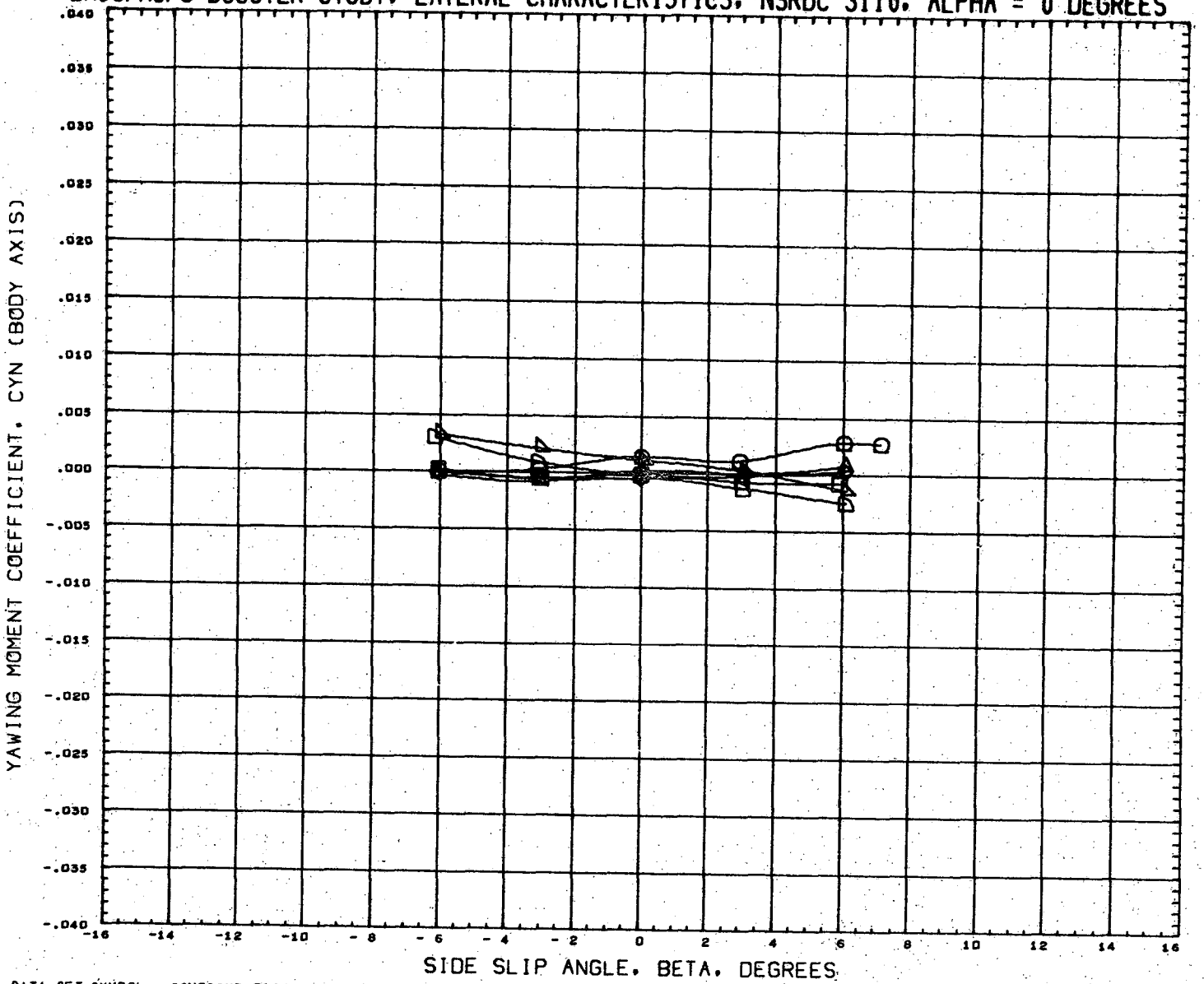
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2338)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2350)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2326)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2362)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2374)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2386)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.380

ELEVTR	CANARD	INCIDC	CNDFOS
-20.000	20.000	3.000	1.000
-10.000	20.000	3.000	1.000
0.000	20.000	3.000	1.000
10.000	20.000	3.000	1.000
20.000	20.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES

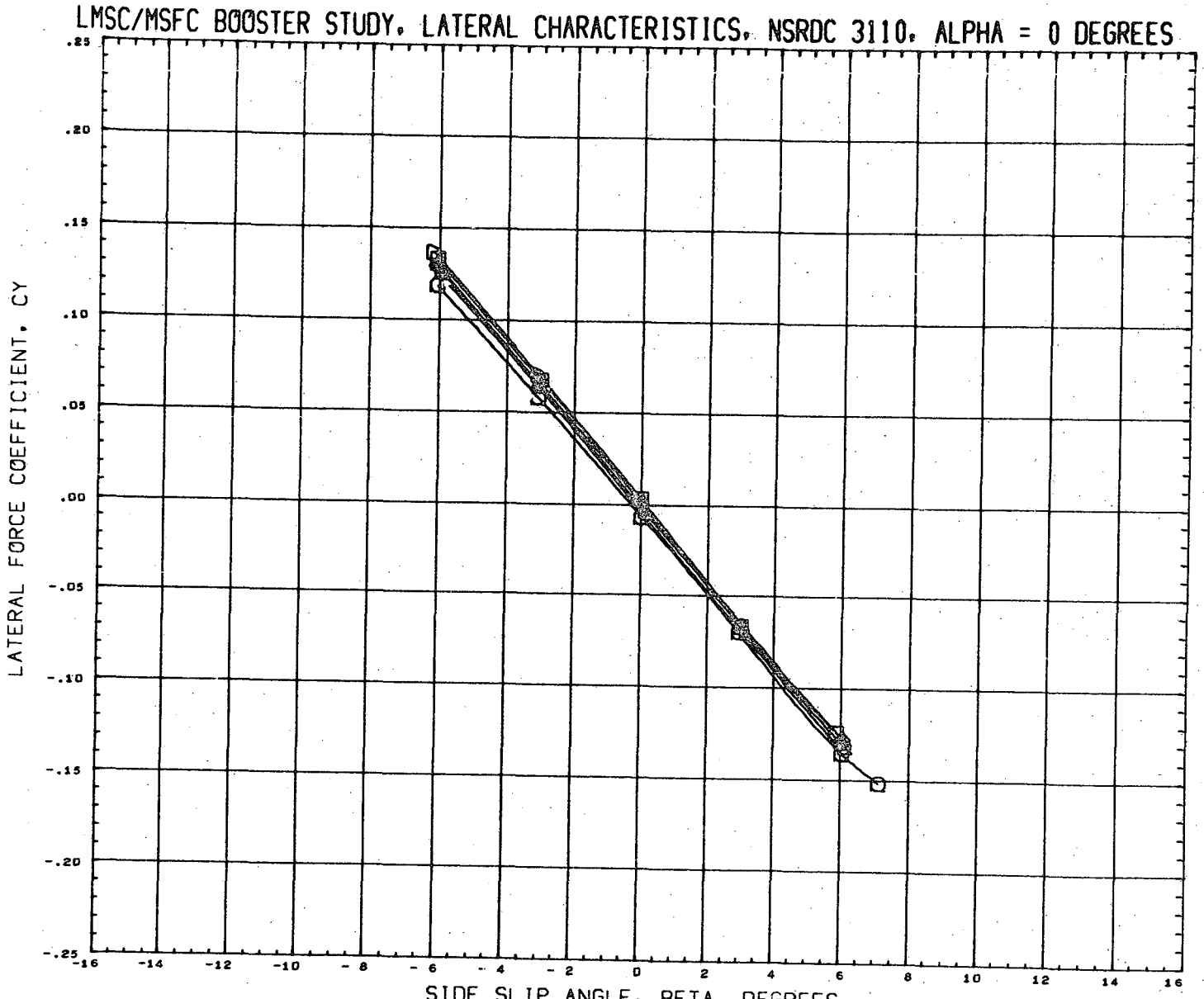


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2338)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2350)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2326)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2362)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2374)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2386)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.380

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	20.000	3.000	1.000
-10.000	20.000	3.000	1.000
0.000	20.000	3.000	1.000
10.000	20.000	3.000	1.000
20.000	20.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



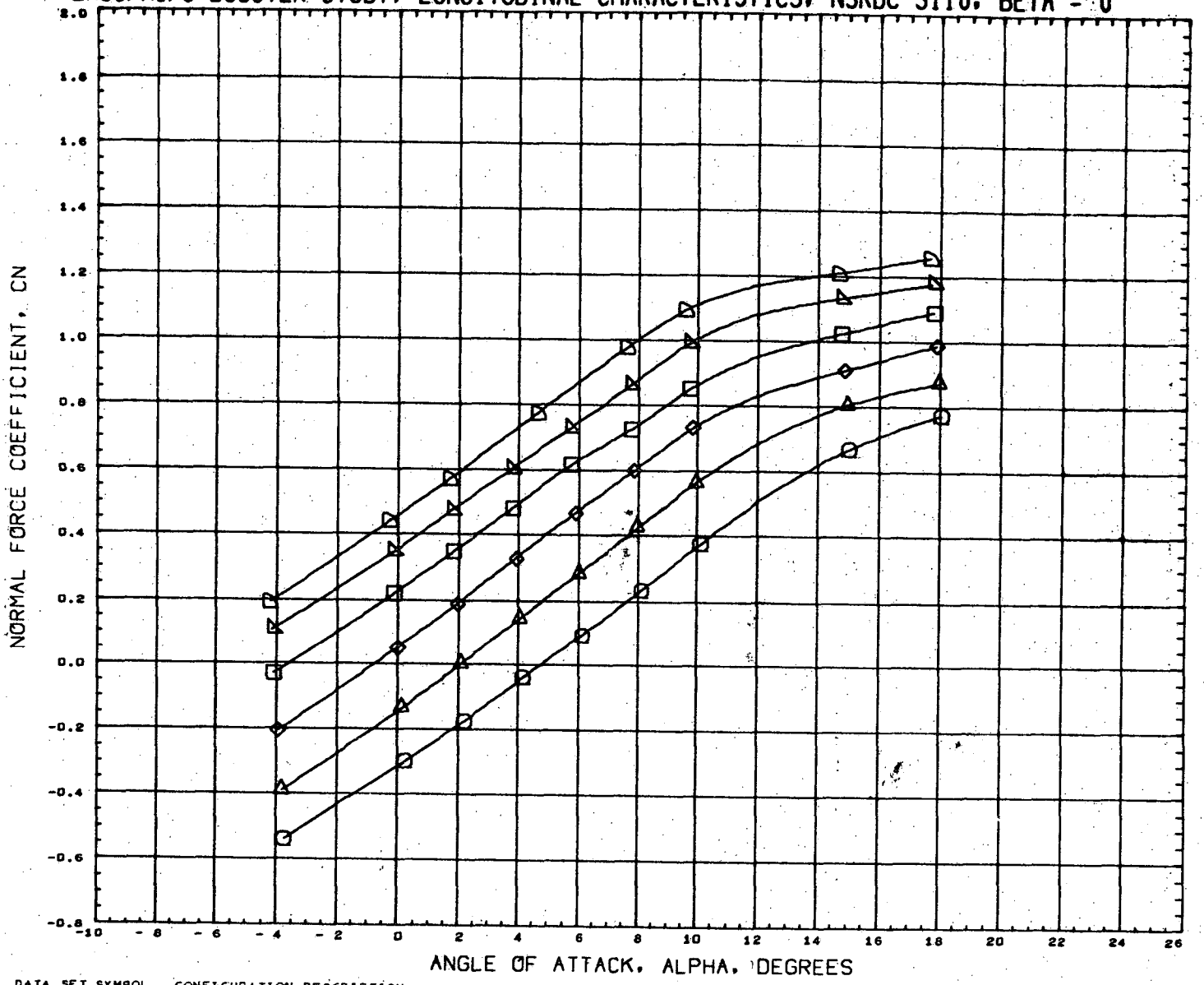
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2338)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2350)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2326)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2362)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2374)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2366)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.380

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	20.000	3.000	1.000
-10.000	20.000	3.000	1.000
0.000	20.000	3.000	1.000
10.000	20.000	3.000	1.000
20.000	20.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



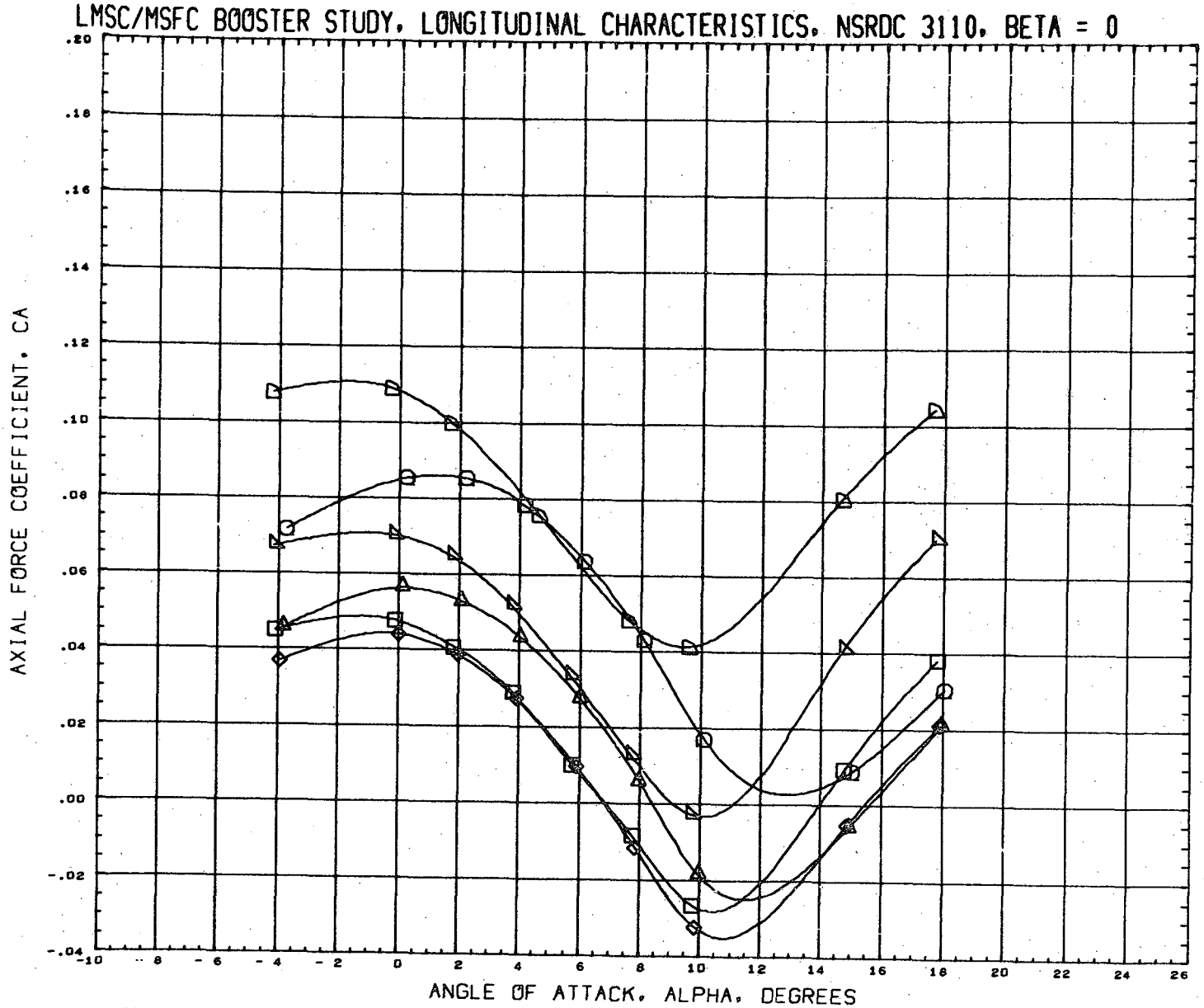
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2457)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2461)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2465)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2469)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2473)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2477)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

MACH 0.381

ELEVTR	INCIDW	WNGPOS
-20.000	0.000	1.000
-10.000	0.000	1.000
0.000	0.000	1.000
10.000	0.000	1.000
20.000	0.000	1.000
30.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2457)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2461)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2465)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2469)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2473)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2477)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

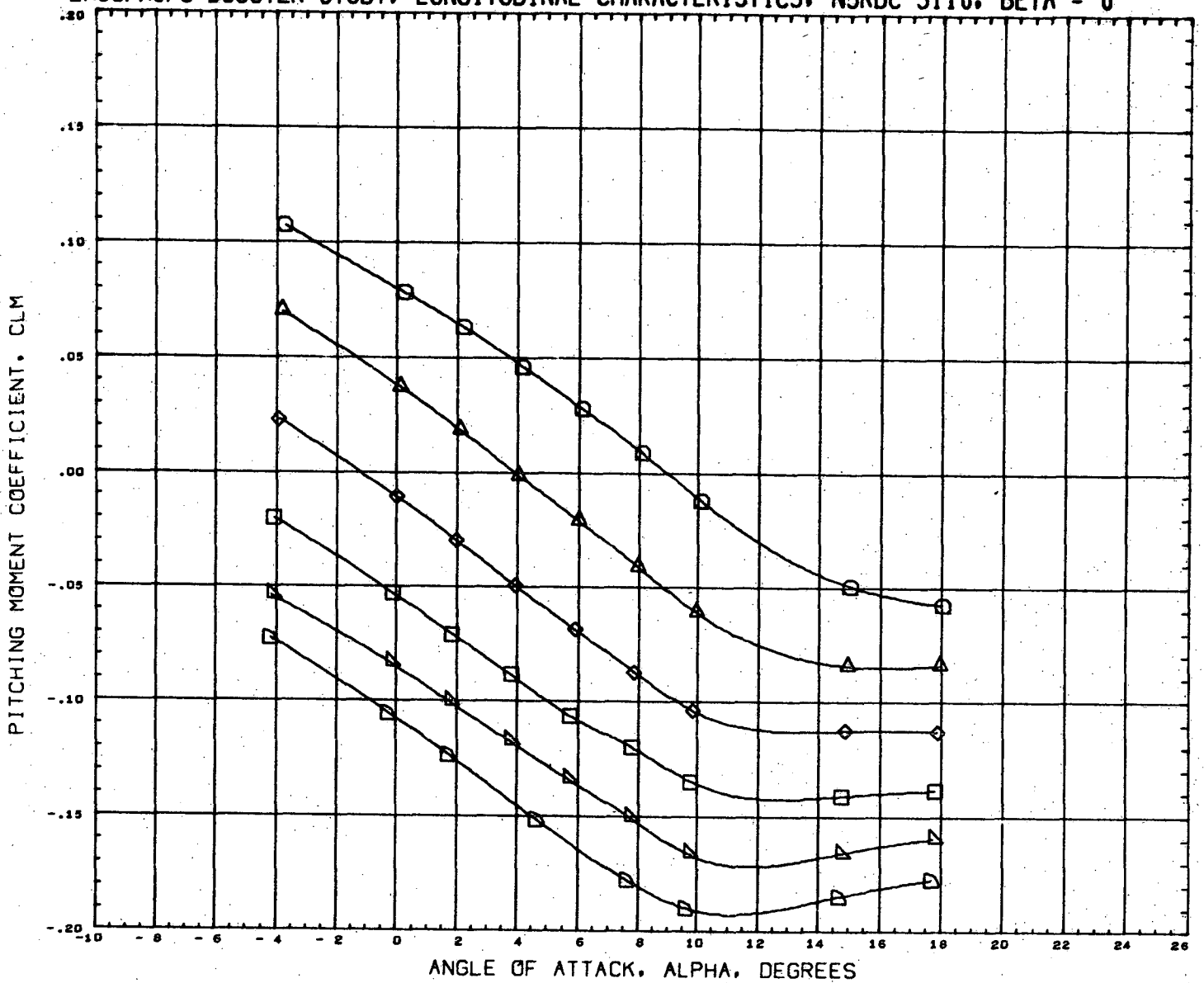
MACH 0.381

ELEVTR	INCIDW	WNGFOS
-20.000	0.000	1.000
-10.000	0.000	1.000
0.000	0.000	1.000
10.000	0.000	1.000
20.000	0.000	1.000
30.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0

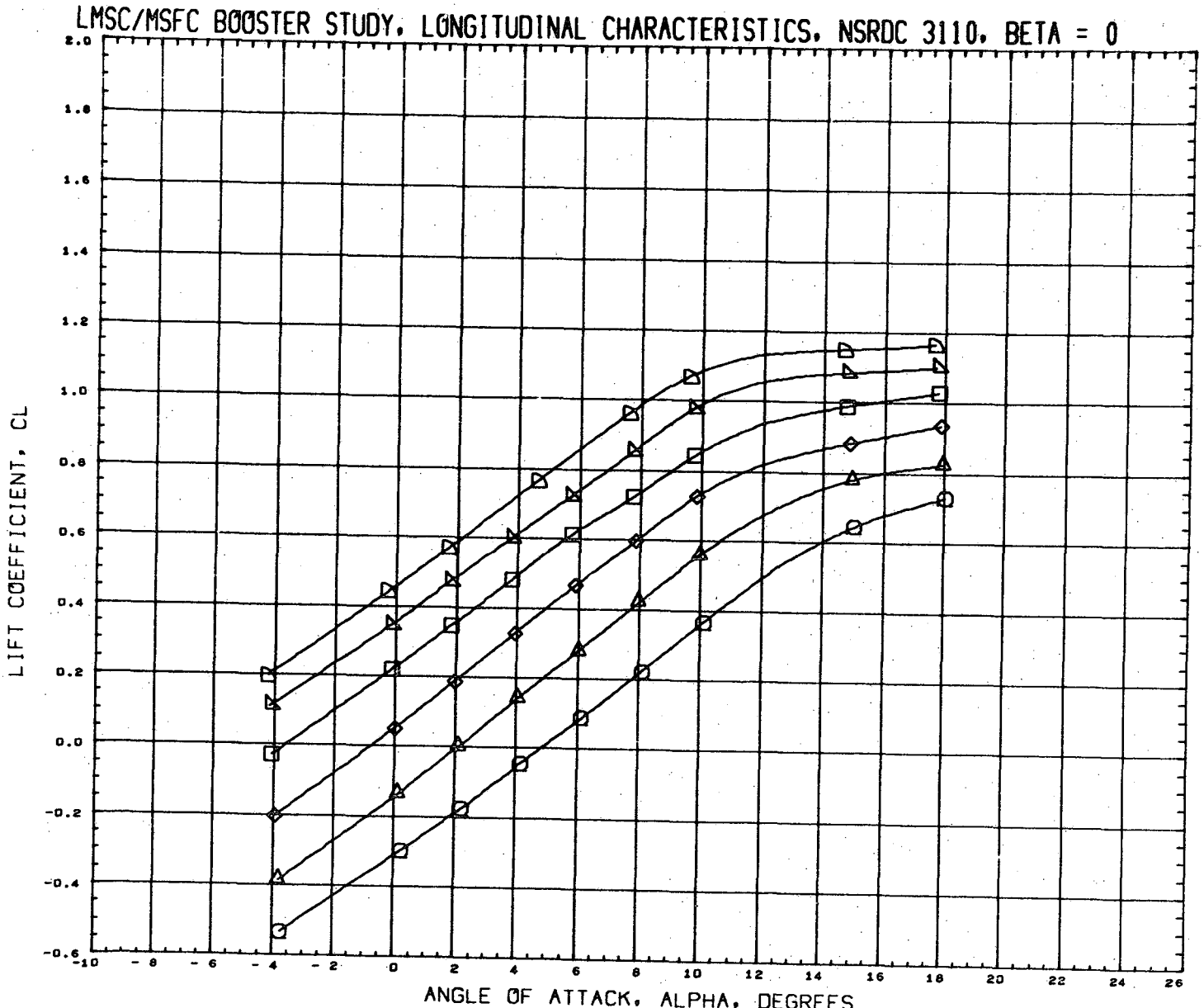


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2457)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2461)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2465)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2469)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN247?)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2477)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

MACH 0.381

ELEVTR	INCIDW	WNGPOS
-20.000	0.000	1.000
-10.000	0.000	1.000
0.000	0.000	1.000
10.000	0.000	1.000
20.000	0.000	1.000
30.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2457)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2461)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2465)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2469)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2473)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN247?)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

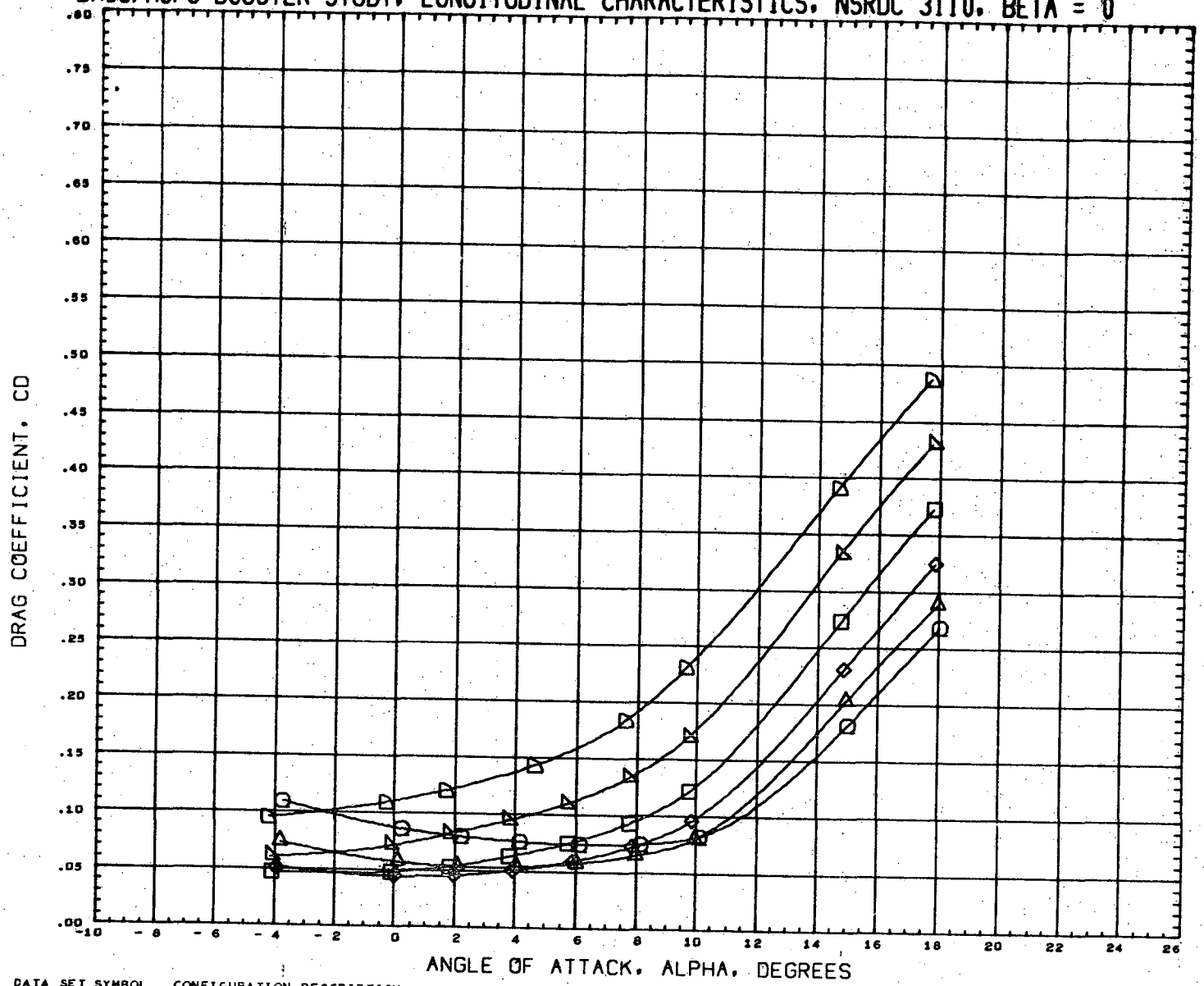
MACH 0.381

ELEVTR	INCIDW	WNGPOS
-20.000	0.000	1.000
-10.000	0.000	1.000
0.000	0.000	1.000
10.000	0.000	1.000
20.000	0.000	1.000
30.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2457)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2461)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2465)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2469)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2473)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2477)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

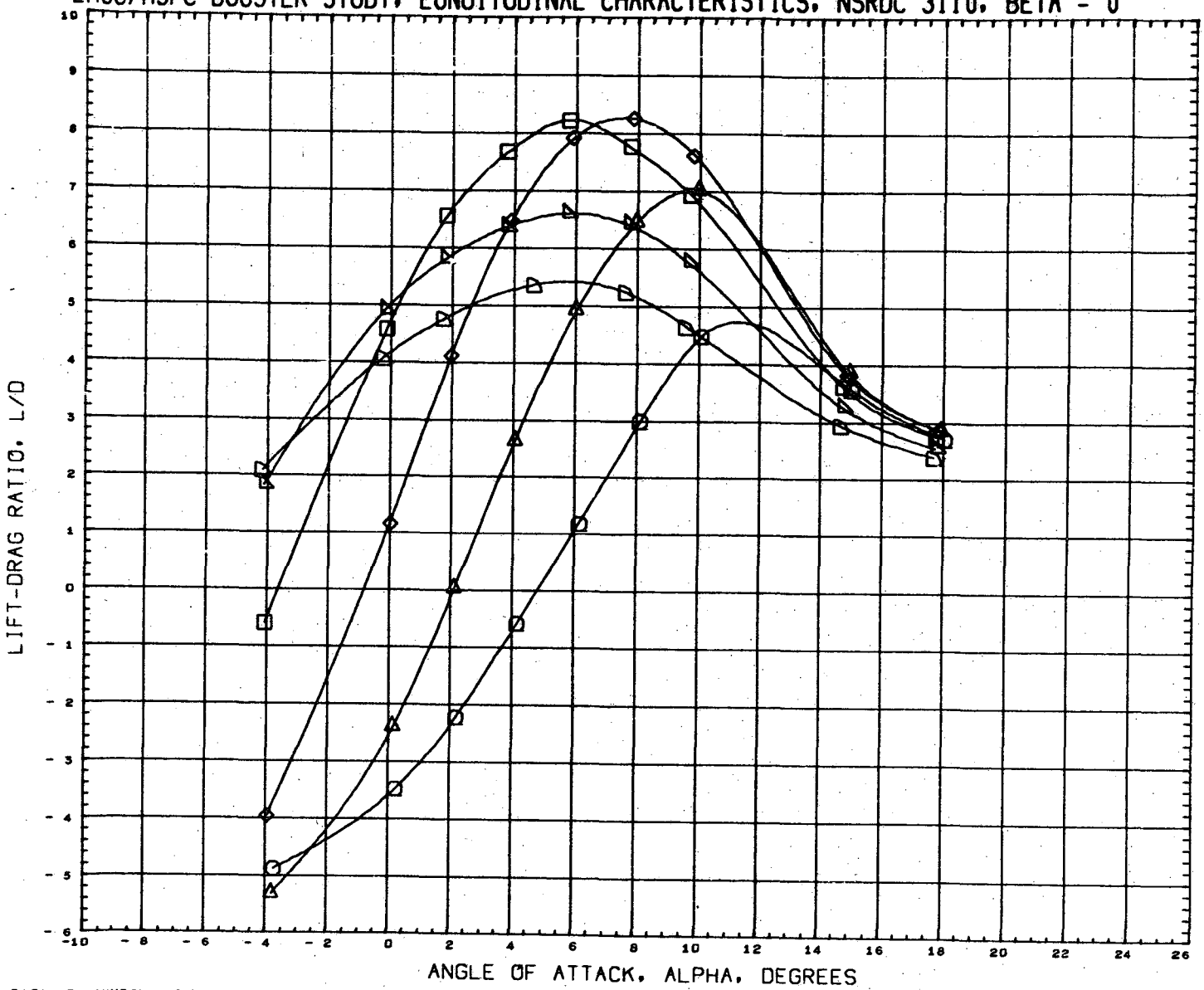
MACH 0.381

ELEVTR	INCIDW	WNGPOS
-20.000	0.000	1.000
-10.000	0.000	1.000
0.000	0.000	1.000
10.000	0.000	1.000
20.000	0.000	1.000
30.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2457)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2461)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2465)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2469)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2473)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2477)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

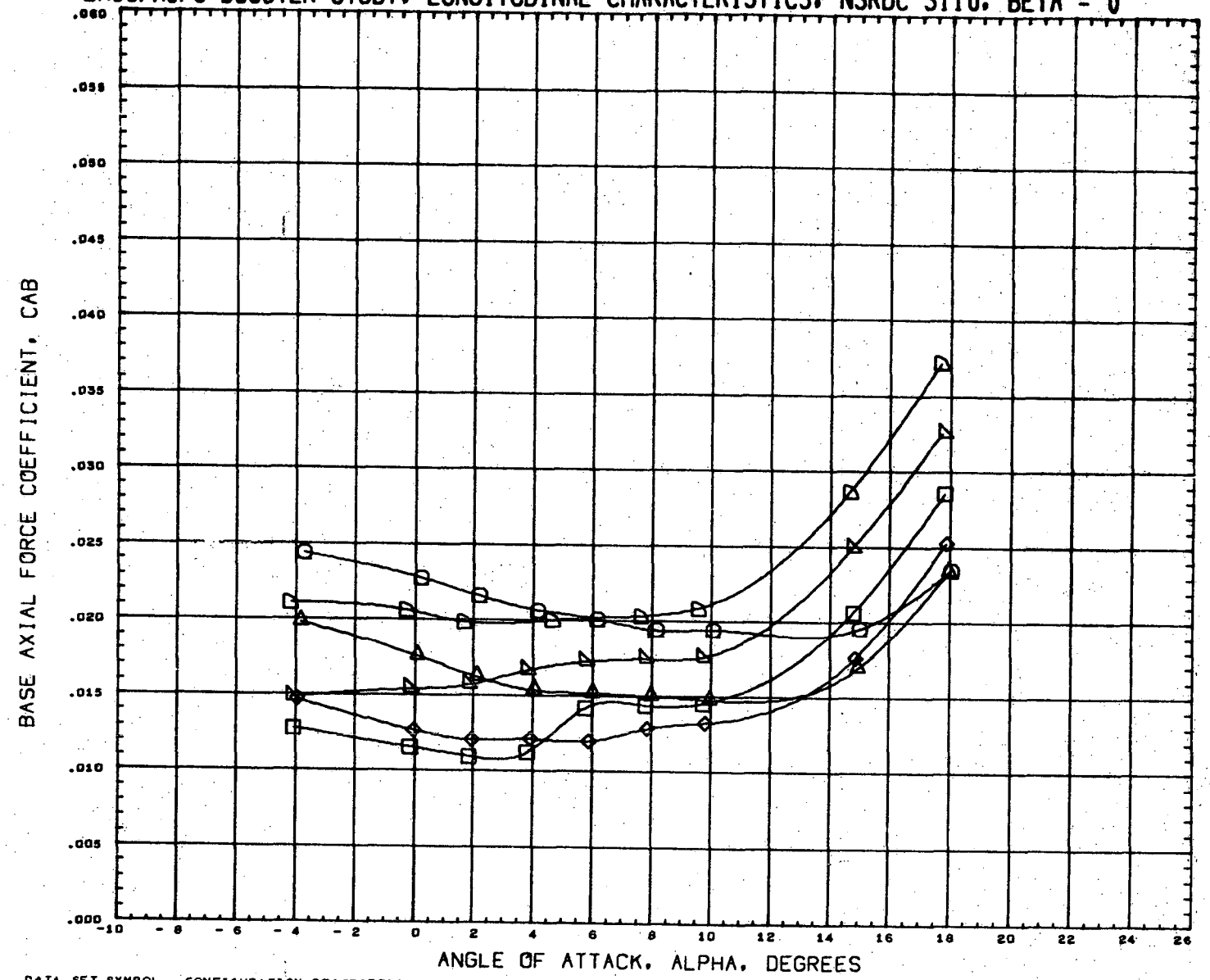
MACH 0.381

ELEVTR	INCIDW	WNGPOS
-20.000	0.000	1.000
-10.000	0.000	1.000
0.000	0.000	1.000
10.000	0.000	1.000
20.000	0.000	1.000
30.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2457)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2461)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2465)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2469)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2473)	▷	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2477)	▽	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

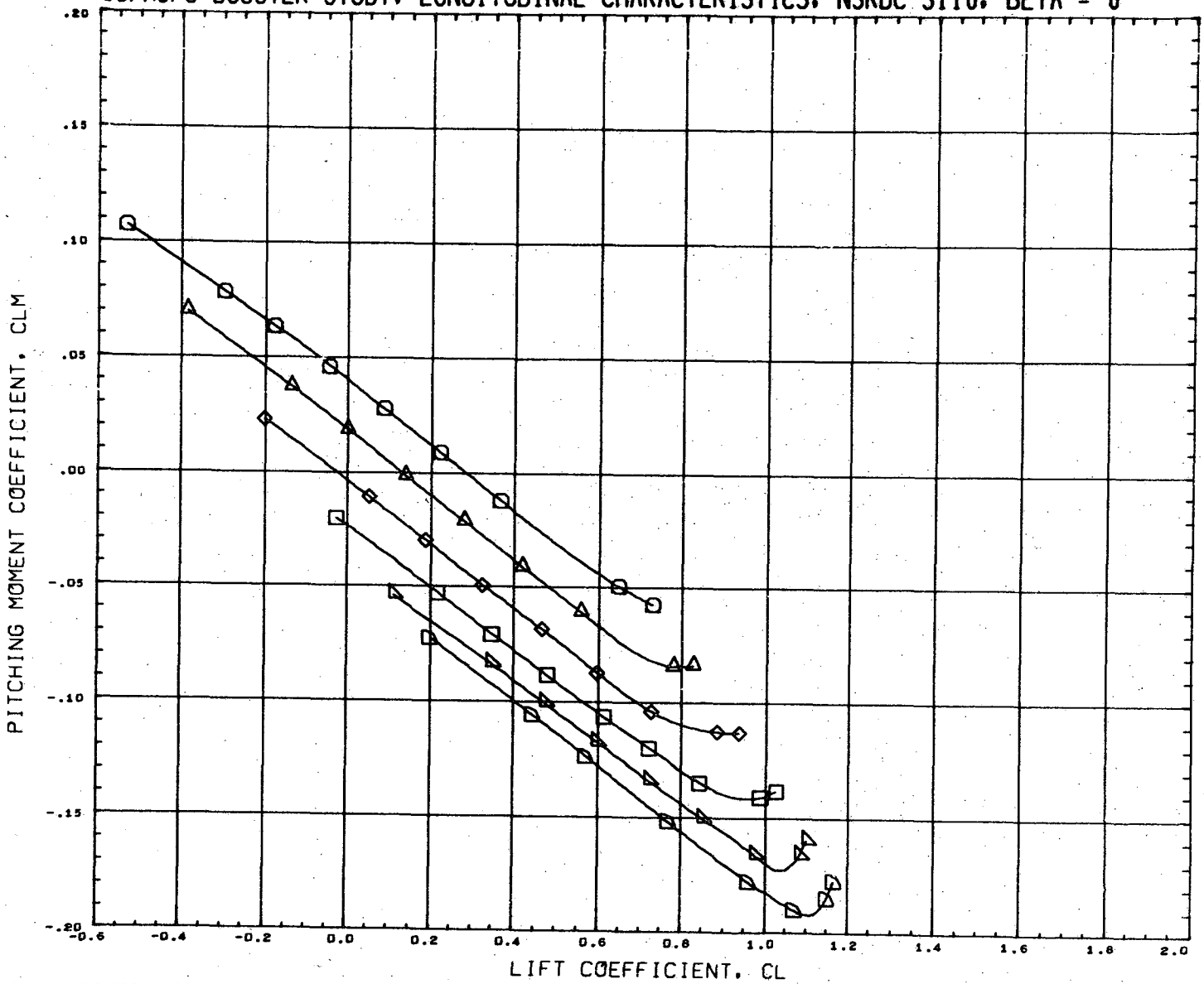
MACH 0.381

ELEVTR	INCIDW	WNGPOS
-20.000	0.000	1.000
-10.000	0.000	1.000
0.000	0.000	1.000
10.000	0.000	1.000
20.000	0.000	1.000
30.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2457)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2461)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2465)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2469)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2473)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2477)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

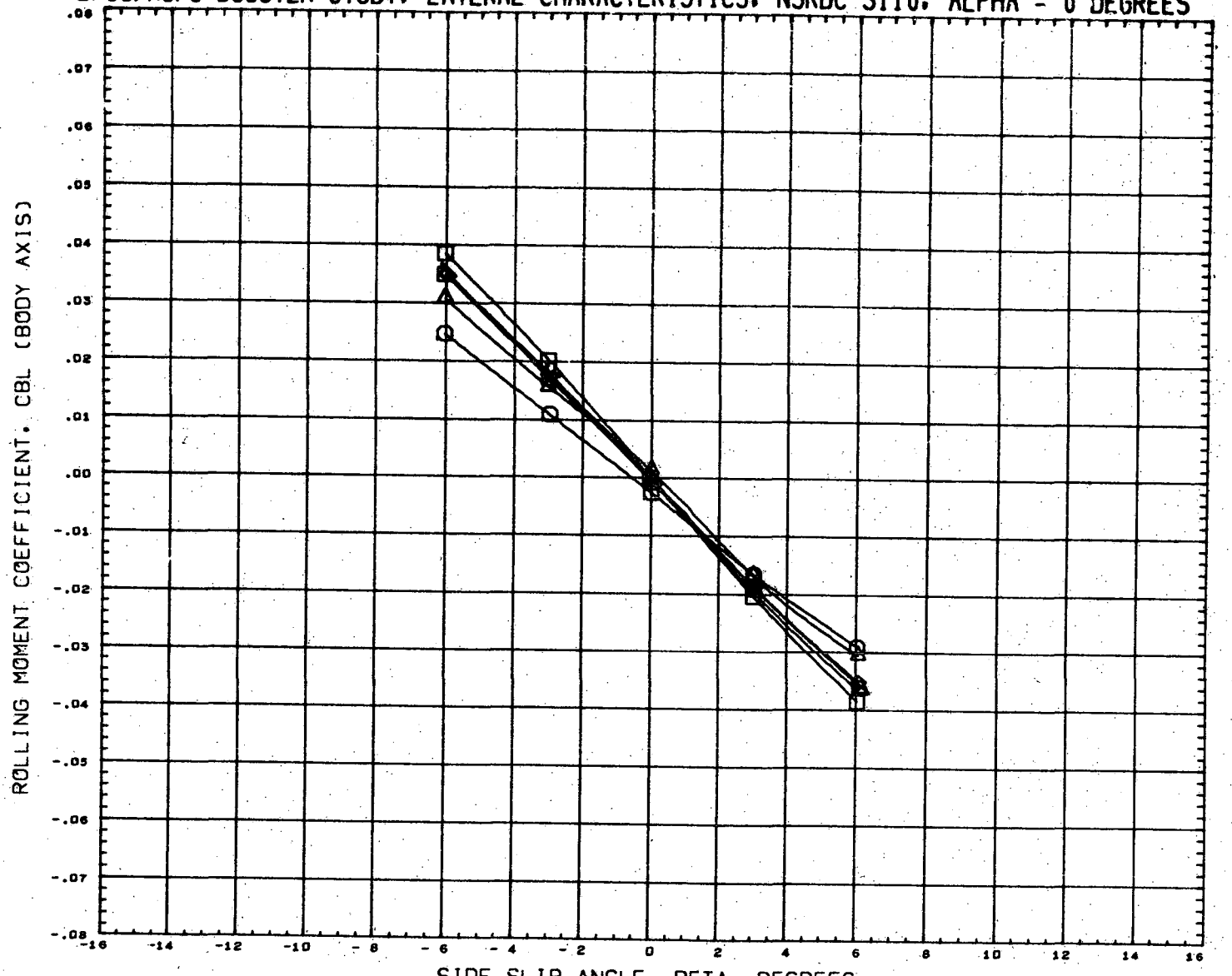
MACH 0.381

ELEVTR	INCIDW	WNGPOS
-20.000	0.000	1.000
-10.000	0.000	1.000
0.000	0.000	1.000
10.000	0.000	1.000
20.000	0.000	1.000
30.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES



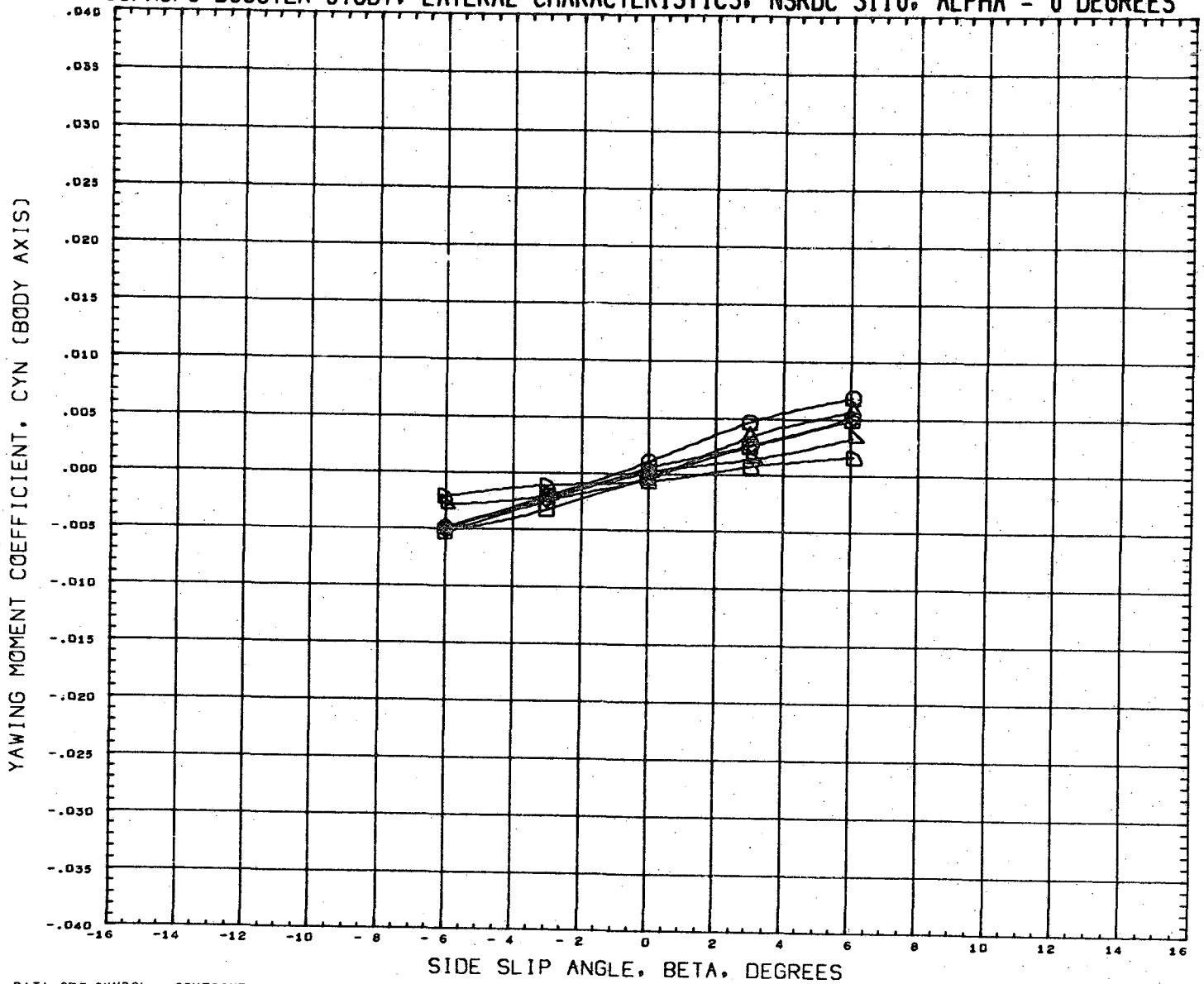
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2458)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2462)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2466)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2470)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2477)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2478)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

MACH 0.380

ELEVTR	INCIDW	WNGPOS
-20.000	0.000	1.000
-10.000	0.000	1.000
0.000	0.000	1.000
10.000	0.000	1.000
20.000	0.000	1.000
30.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2458)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2462)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2466)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2470)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2474)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN24.8)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

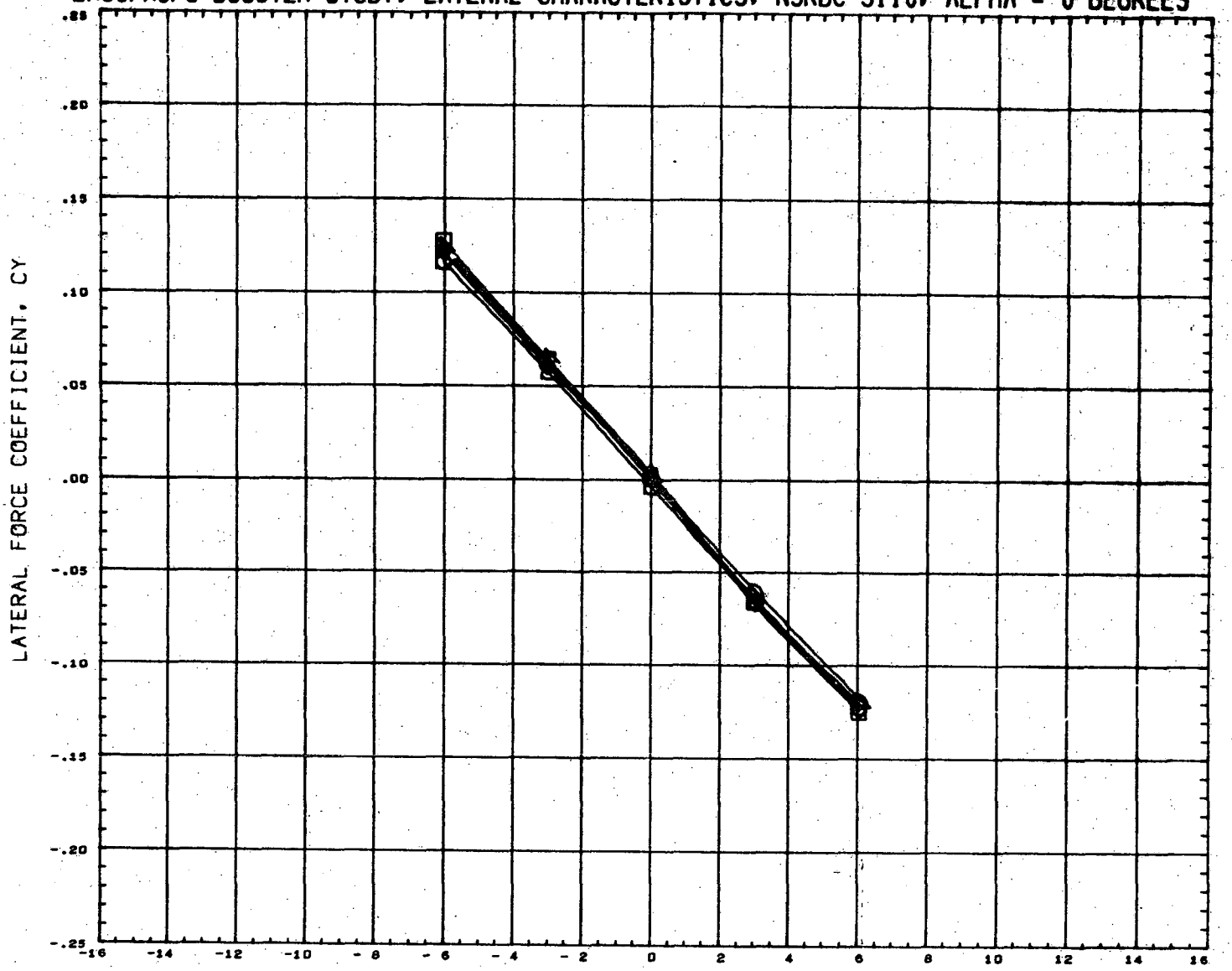
MACH 0.380

ELEVTR	INCIDW	WNGPOS
-20.000	0.000	1.000
-10.000	0.000	1.000
0.000	0.000	1.000
10.000	0.000	1.000
20.000	0.000	1.000
30.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES

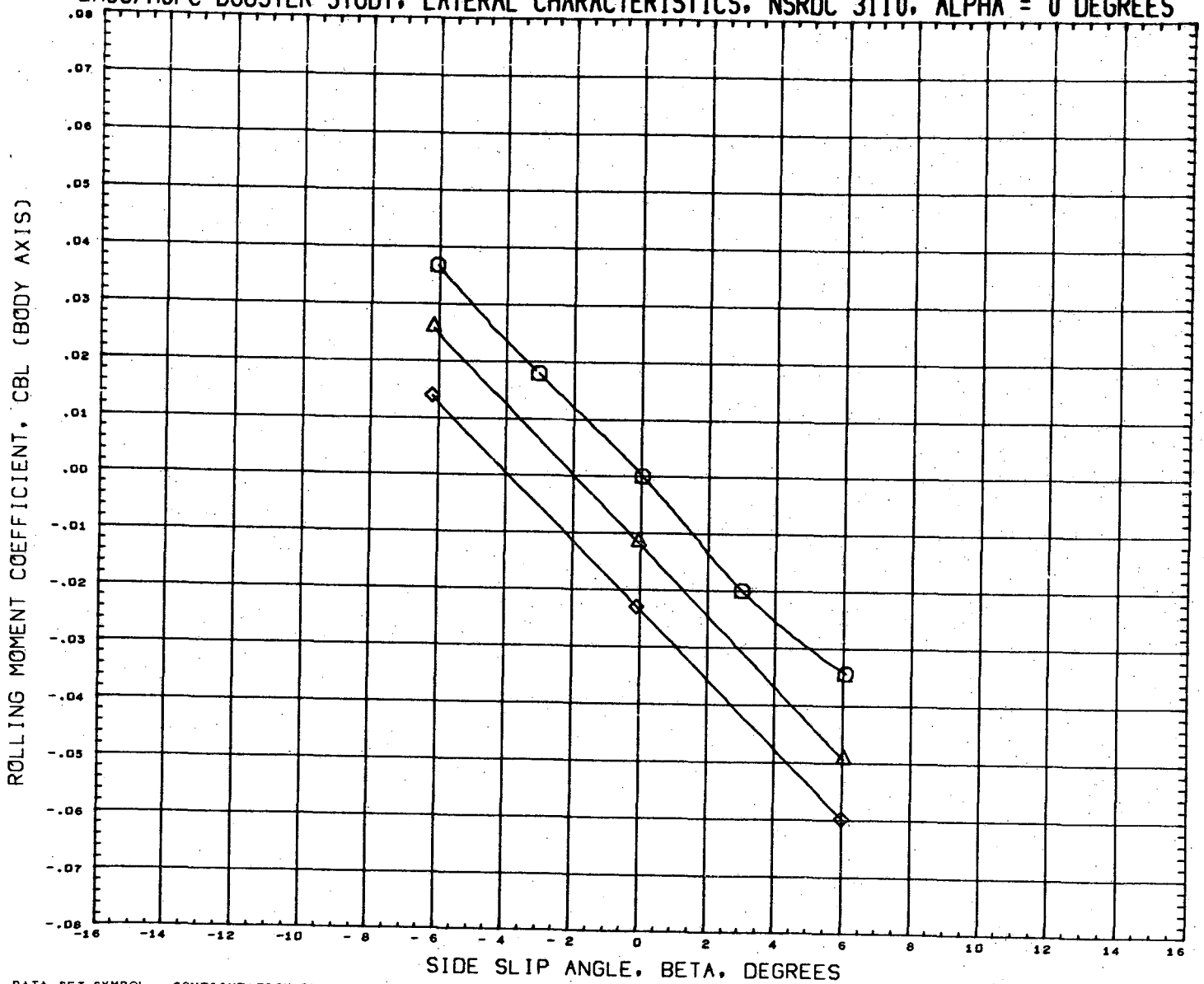


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVTR	INCIDW	WNGPOS
(RN2458)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1	-20.000	0.000	1.000
(RN2462)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1	-10.000	0.000	1.000
(RN2466)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1	0.000	0.000	1.000
(RN2470)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1	10.000	0.000	1.000
(RN2474)	▽	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1	20.000	0.000	1.000
(RN2478)	▷	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1	30.000	0.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2002) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2511) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2514) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

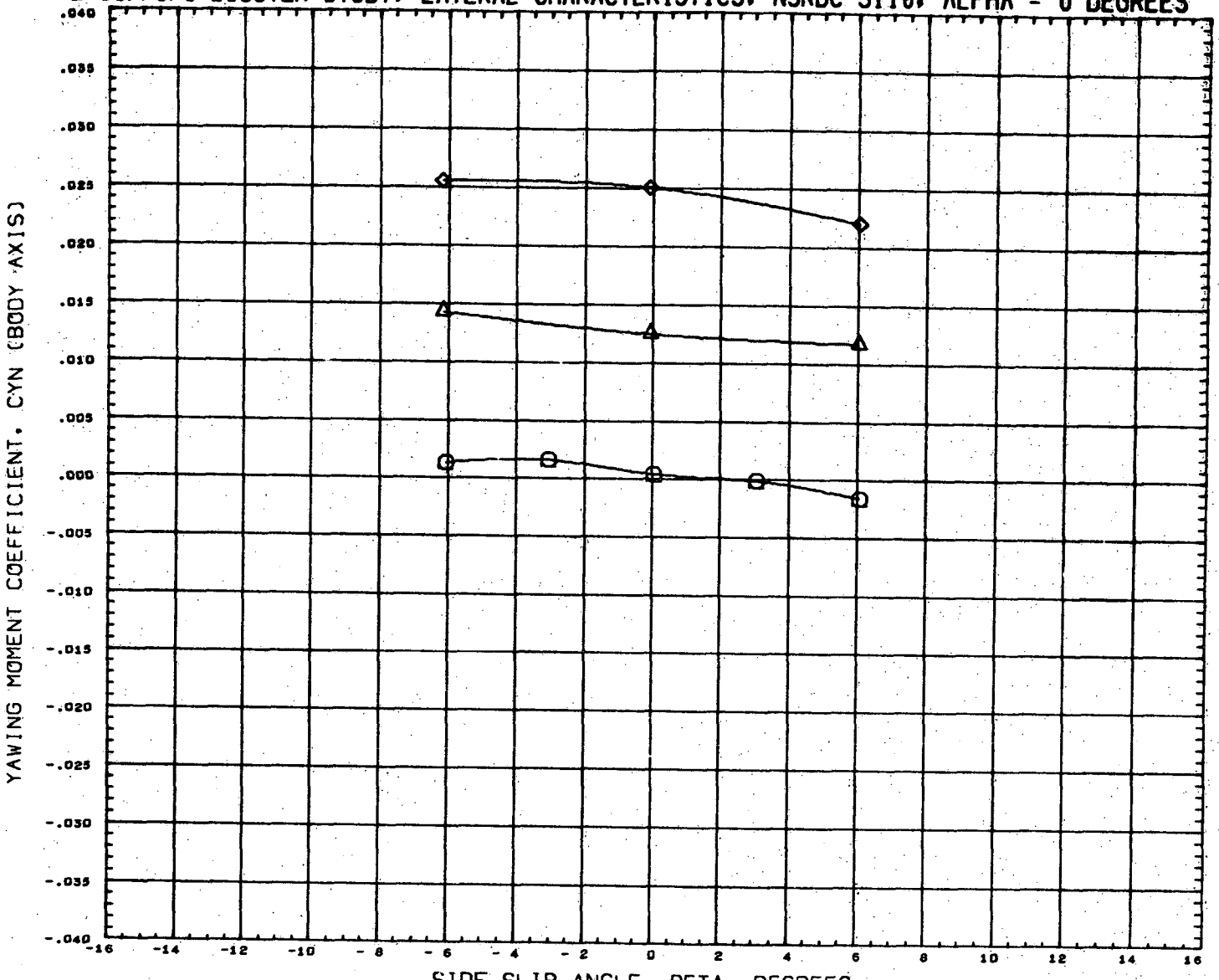
RUDDER	INCIDC	CNDPOS	WNGPOS
0.000	3.000	1.000	1.000
-5.000	3.000	1.000	1.000
-10.000	3.000	1.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES

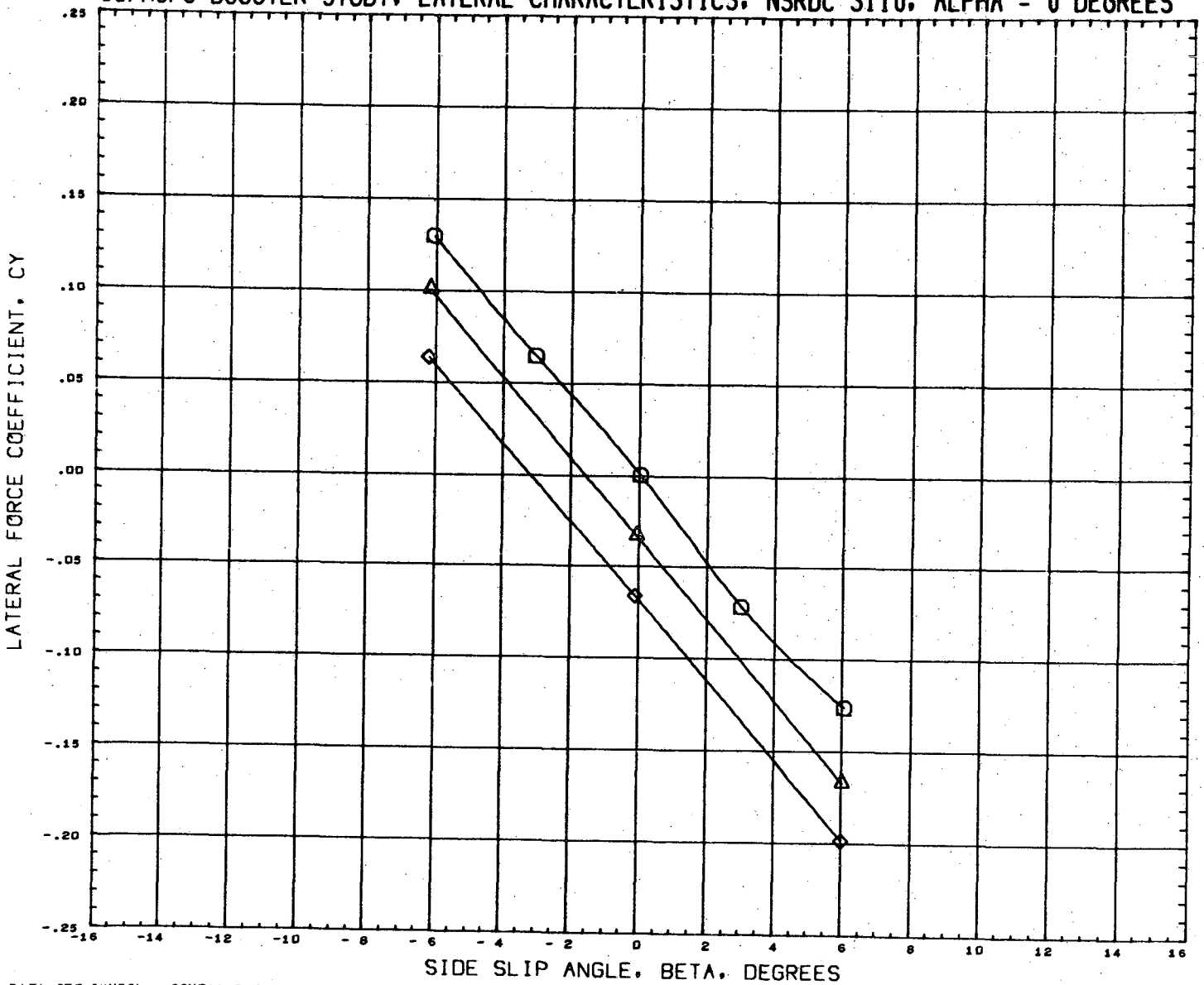


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	INCIDC	CNDPOS	WNGPOS
(RN2002)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	0.000	3.000	1.000	1.000
(RN2511)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	-5.000	3.000	1.000	1.000
(RN2514)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	-10.000	3.000	1.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2002) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2511) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2514) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

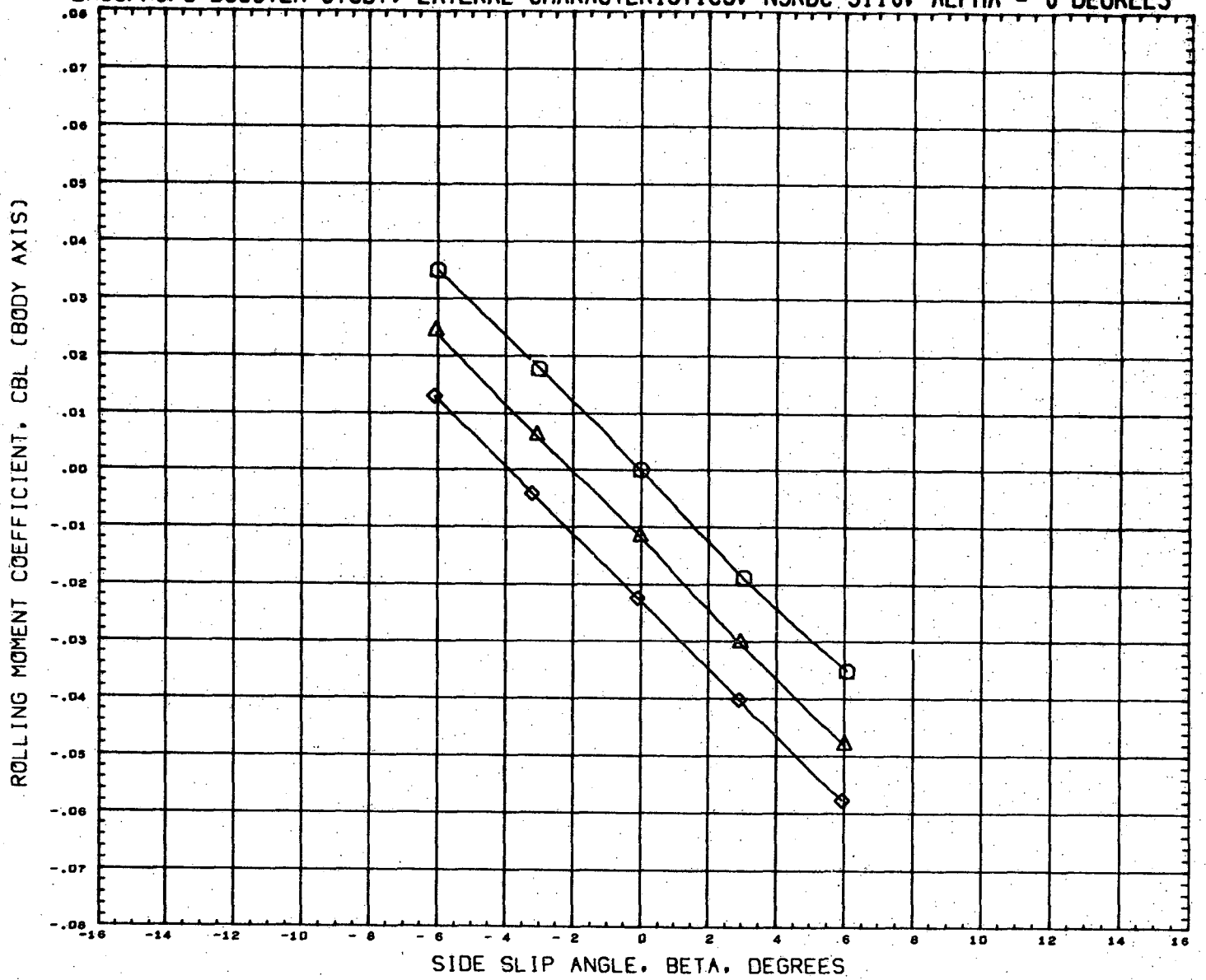
RUDDER	INCIDC	CNDFOS	WNGFOS
0.000	3.000	1.000	1.000
-5.000	3.000	1.000	1.000
-10.000	3.000	1.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES

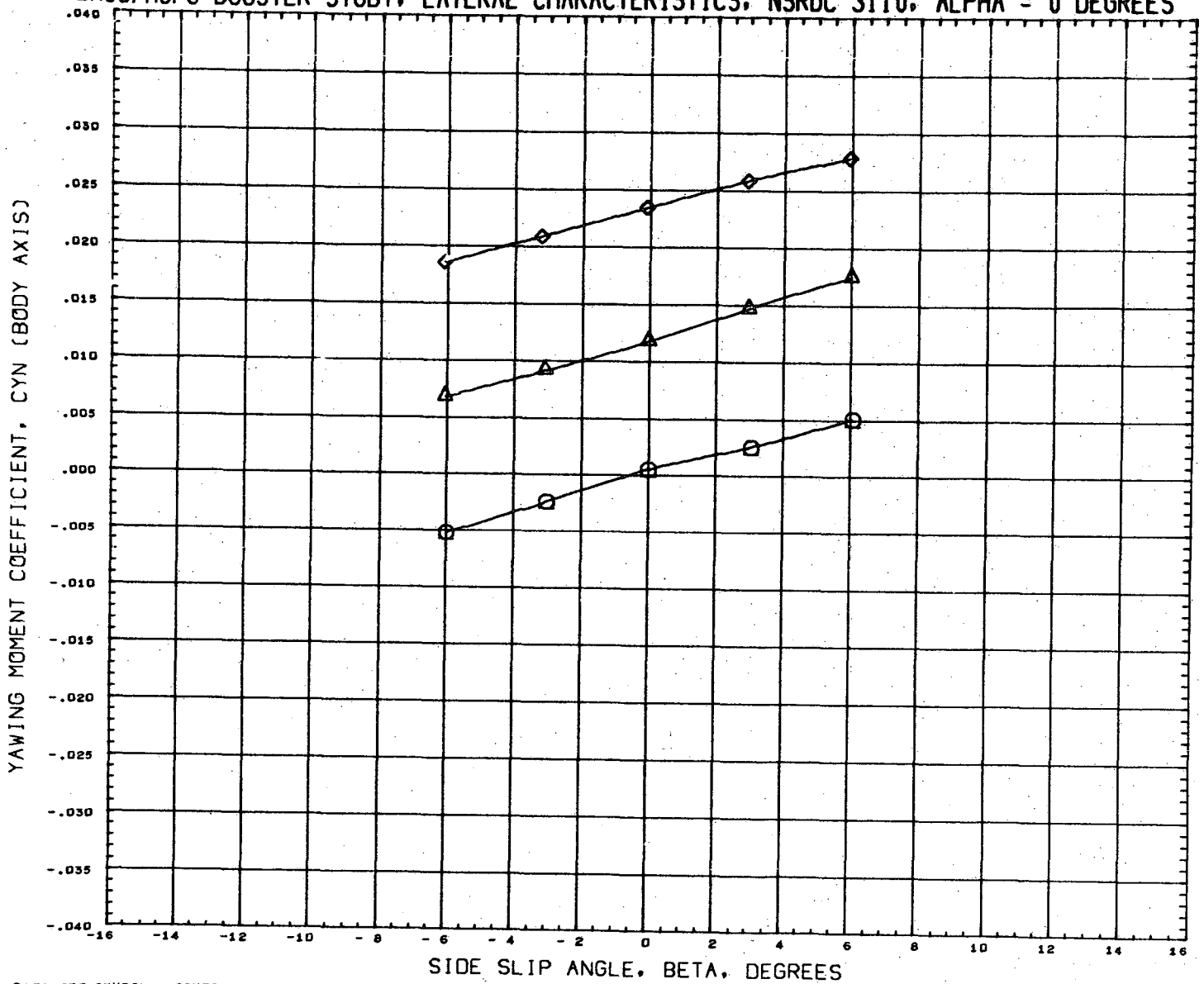


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	INCIDW	WNGPOS
(RN2466)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1	0.000	0.000	1.000
(RN2505)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1	-5.000	0.000	1.000
(RN2508)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1	-10.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2466) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2505) △	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2508) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

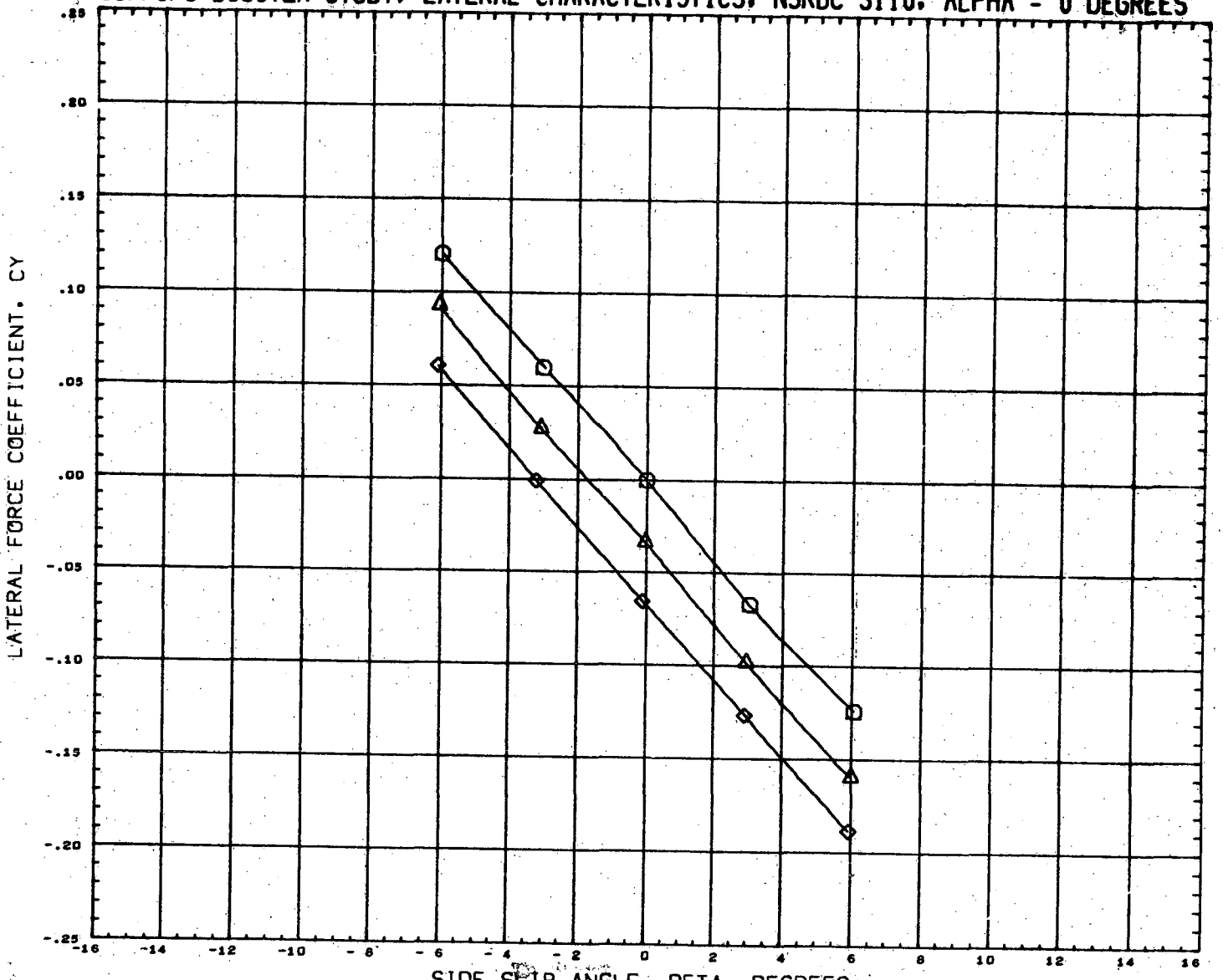
RUDDER	INCIDW	WNGPOS
0.000	0.000	1.000
-5.000	0.000	1.000
-10.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES

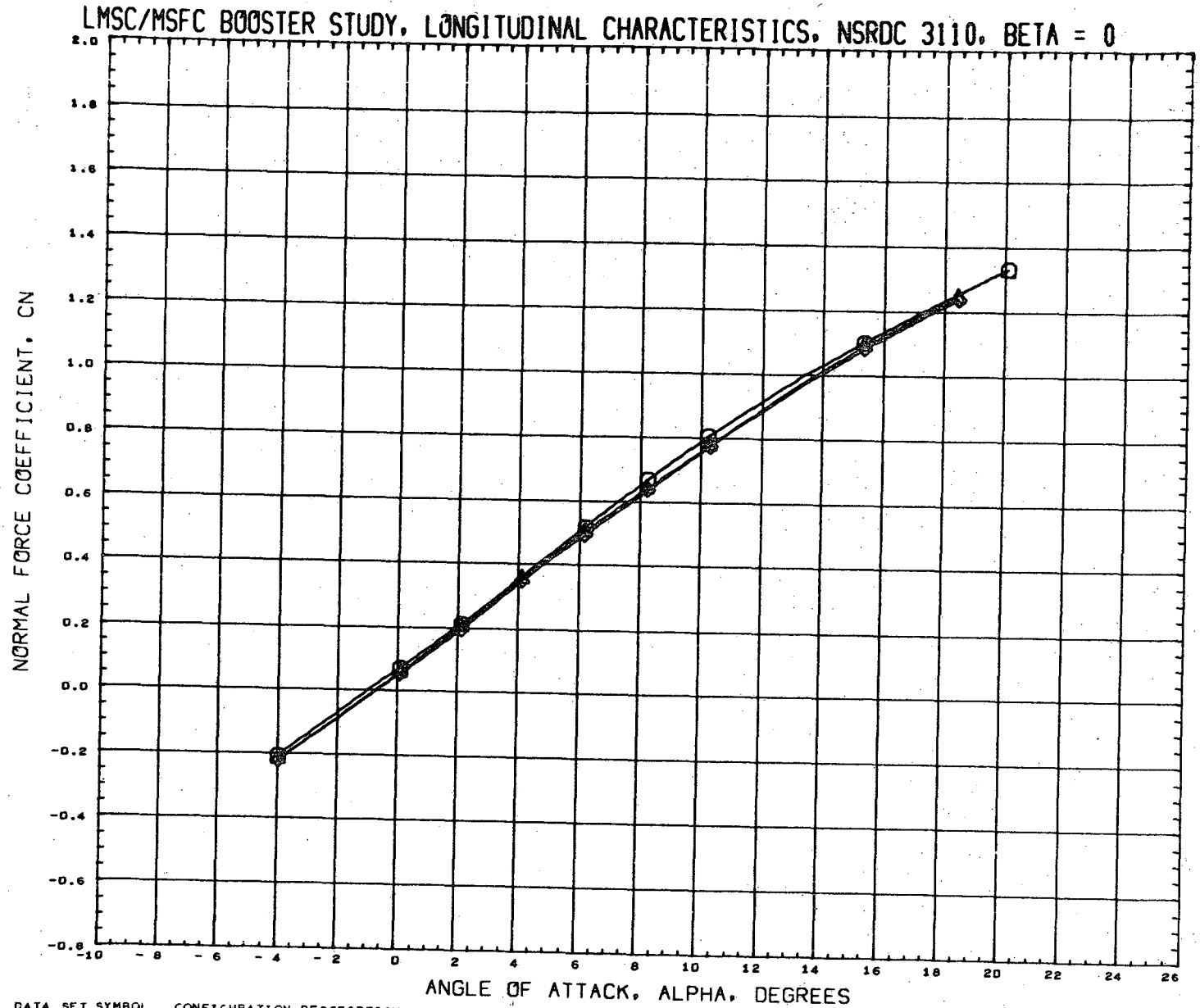


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	RUDDER	INCIDW	WNGPOS
(RN2466)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1	0.000	0.000	1.000
(RN2505)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1	-5.000	0.000	1.000
(RN2508)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1	-10.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

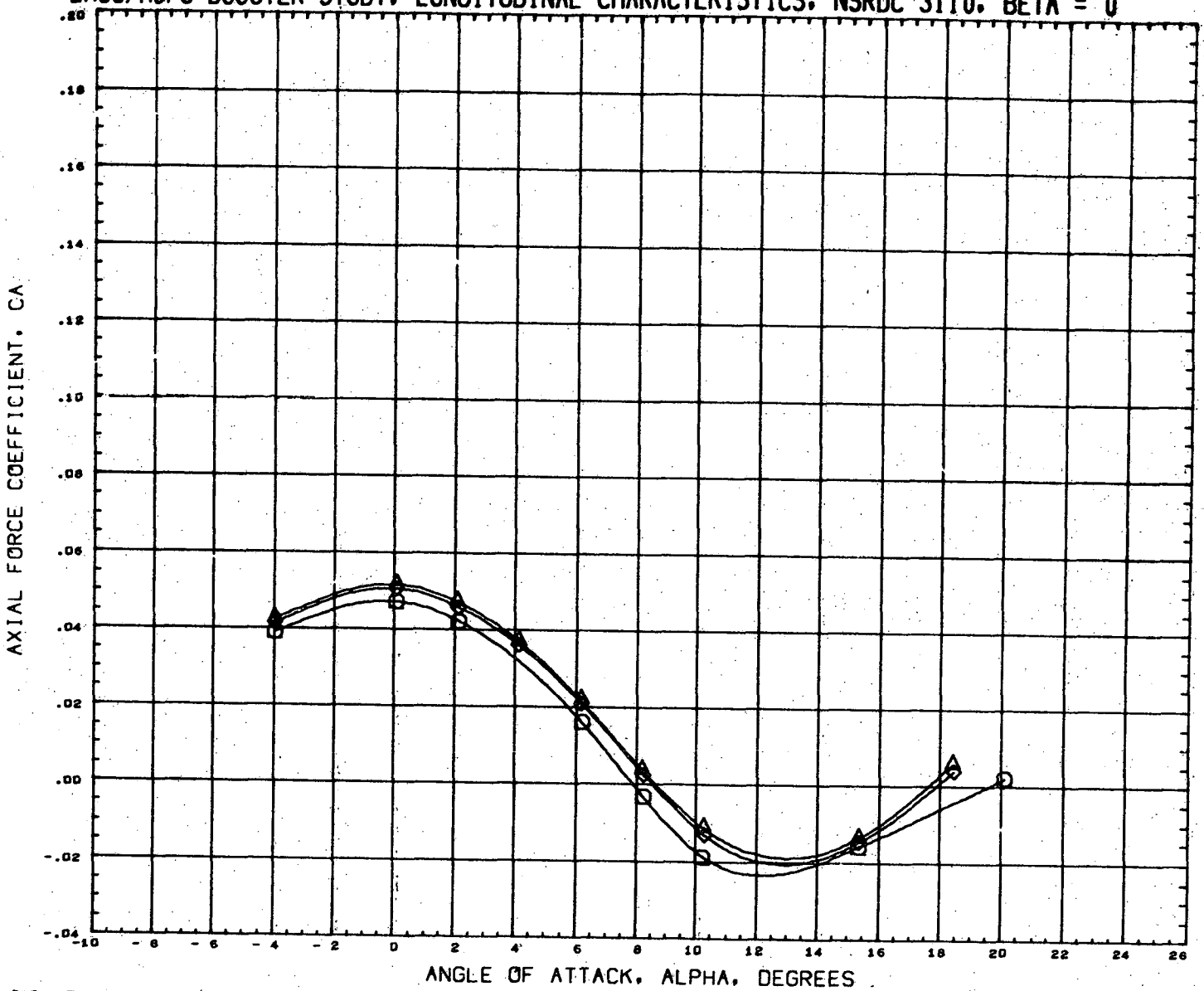


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2001) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000
(RN2561) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D2	3.000	1.000	0.000	1.000
(RN2569) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D3	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0

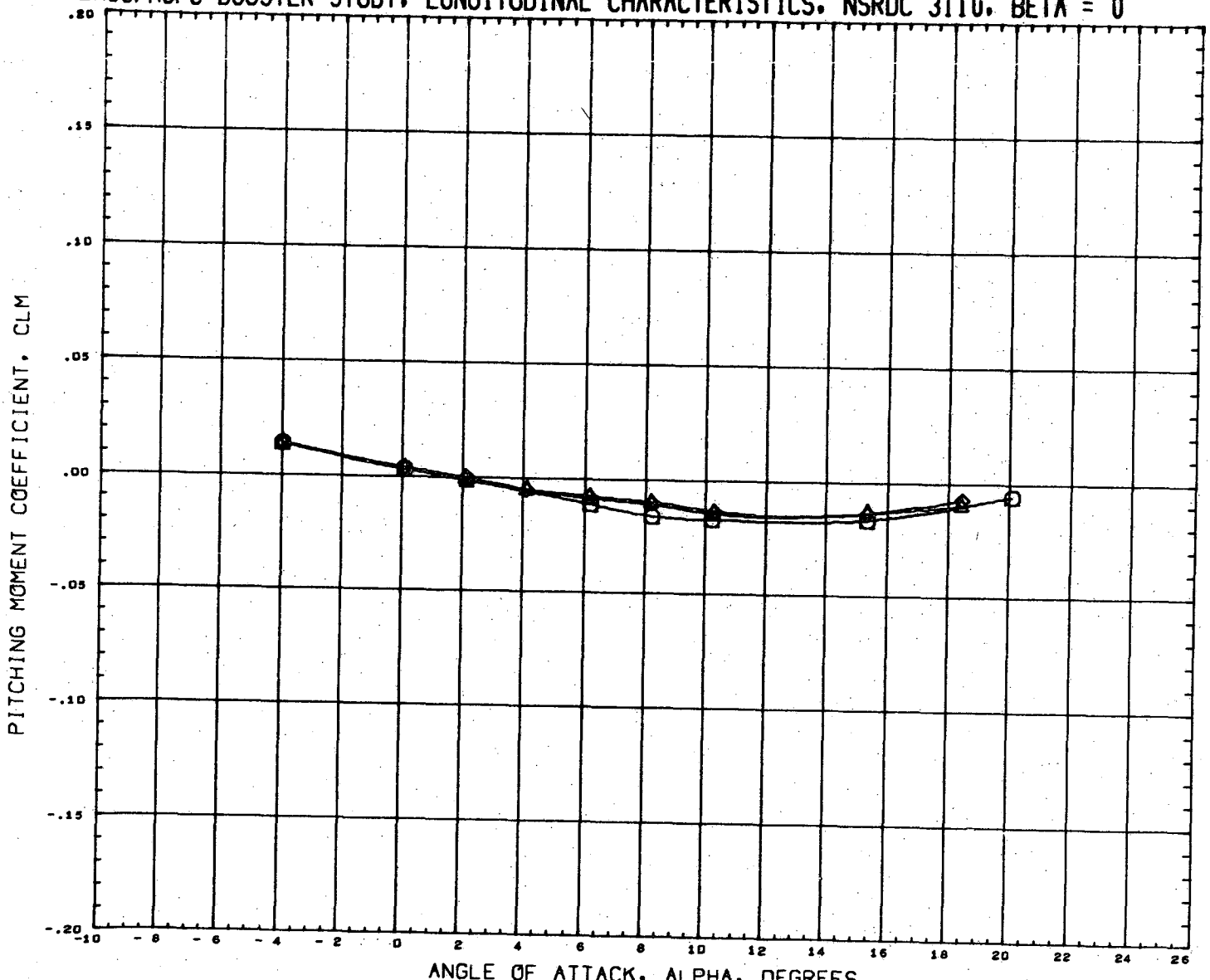


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000
(RN2561)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D2	3.000	1.000	0.000	1.000
(RN2569)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D3	3.000	1.000	0.000	1.000

MACH 0.361

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0

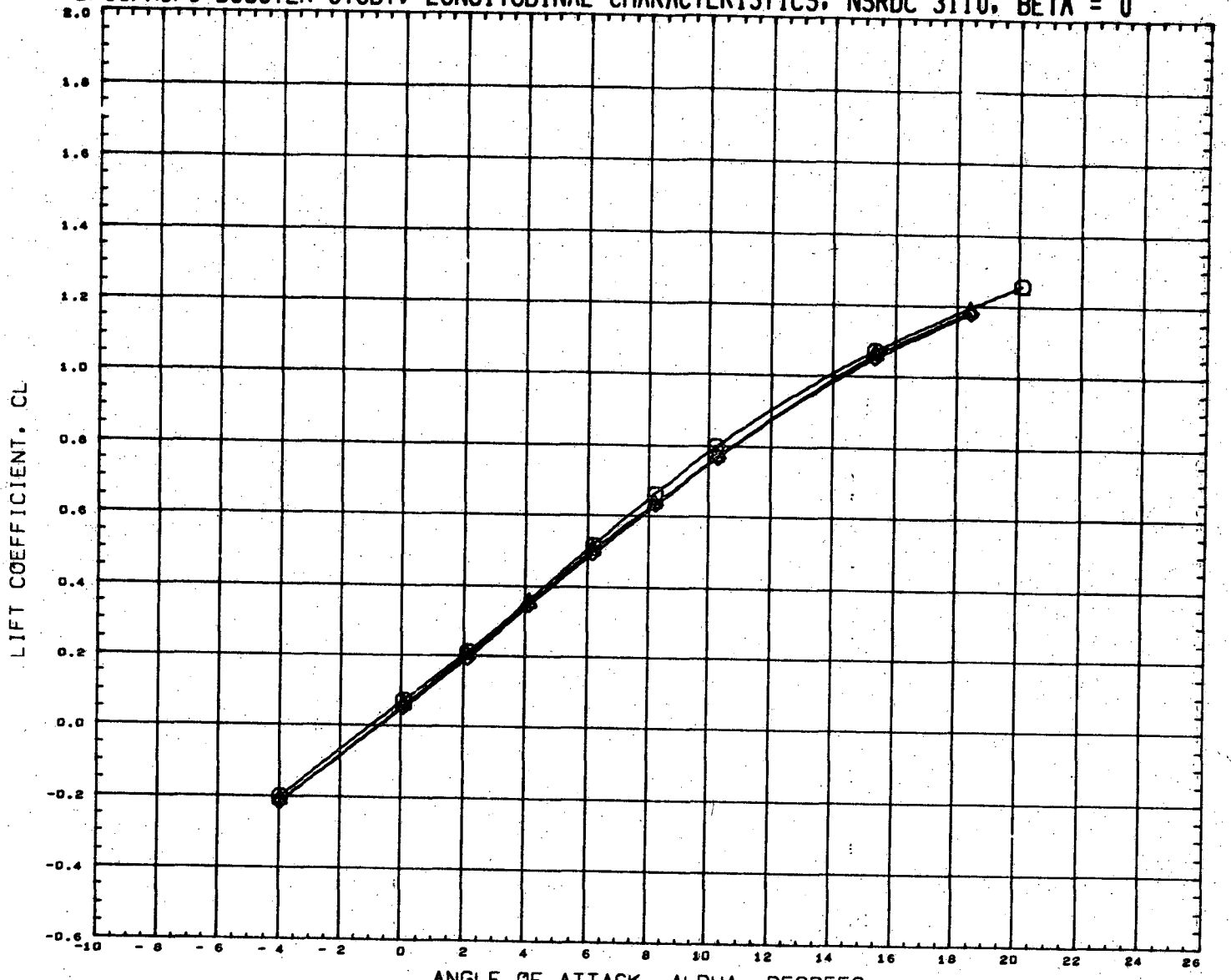


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000
(RN2561)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D2	3.000	1.000	0.000	1.000
(RN2569)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D3	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



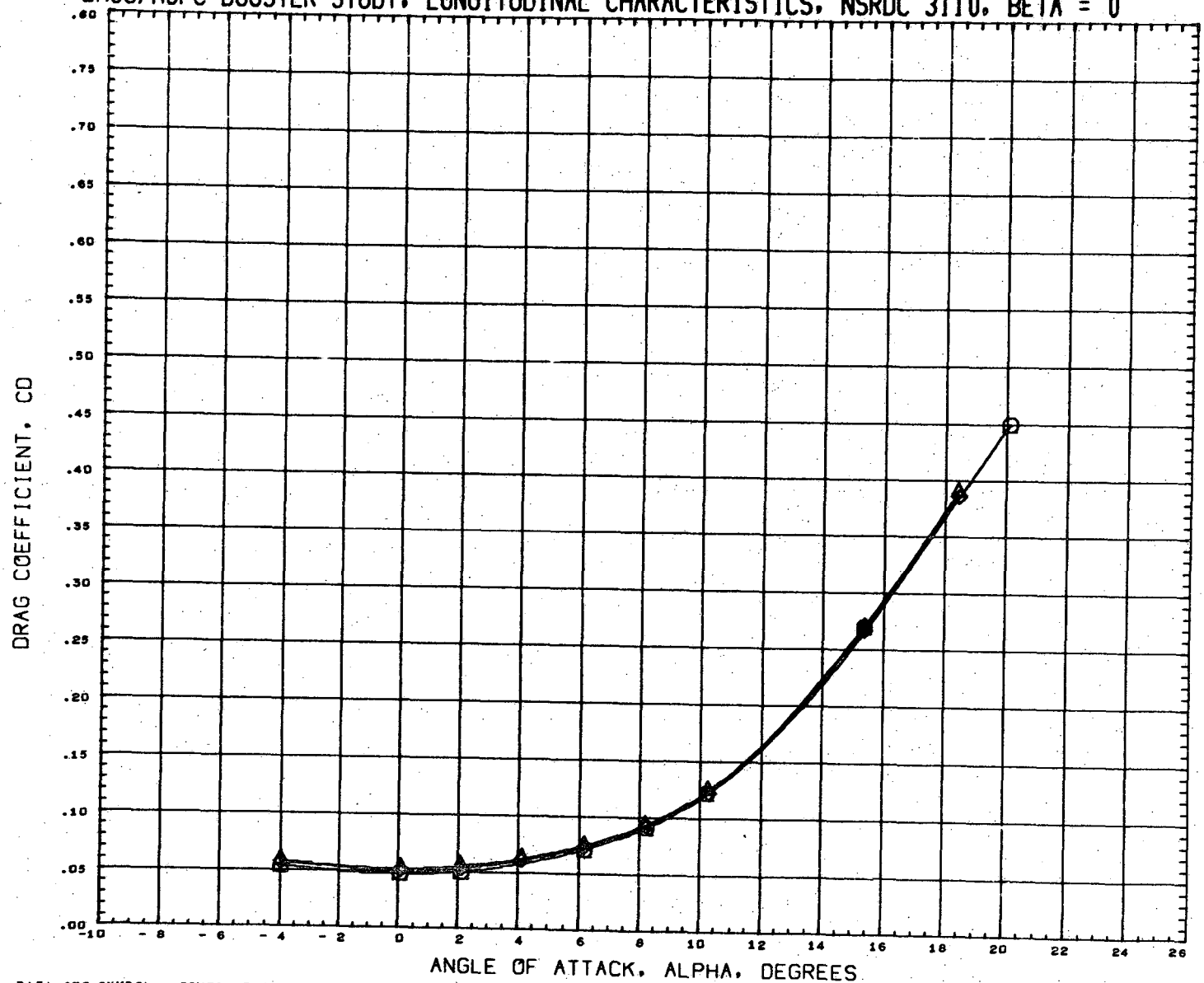
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2561)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D2
(RN2569)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D3

INCIDC	CNDPOS	INCIDW	WNGPOS
3.000	1.000	0.000	1.000
3.000	1.000	0.000	1.000
3.000	1.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0

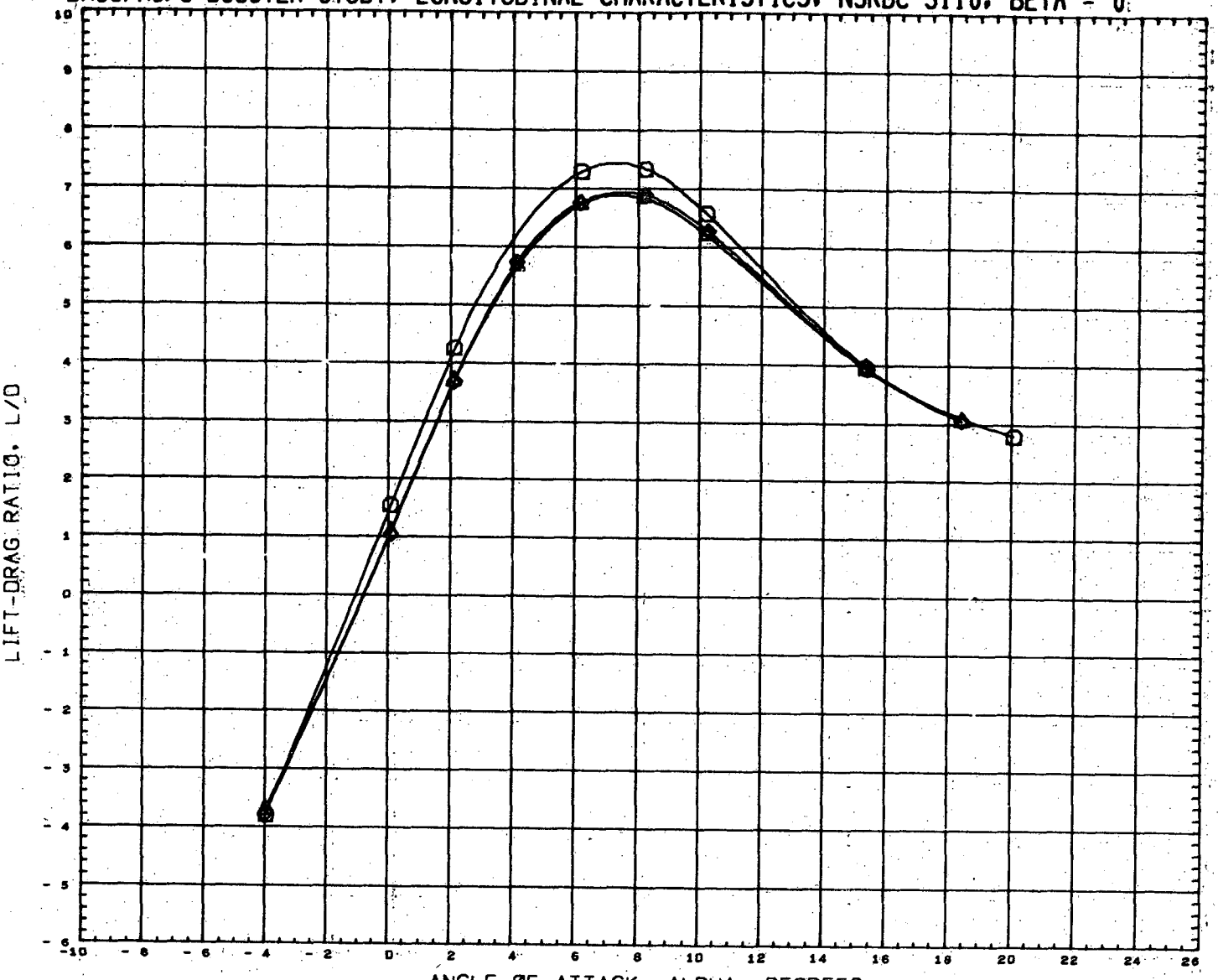


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2001) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000
(RN2561) △	NSRDC-3110,MSFC/LMSC BOGSTER B1C2F1W1V1D2	3.000	1.000	0.000	1.000
(RN2569) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D3	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0.

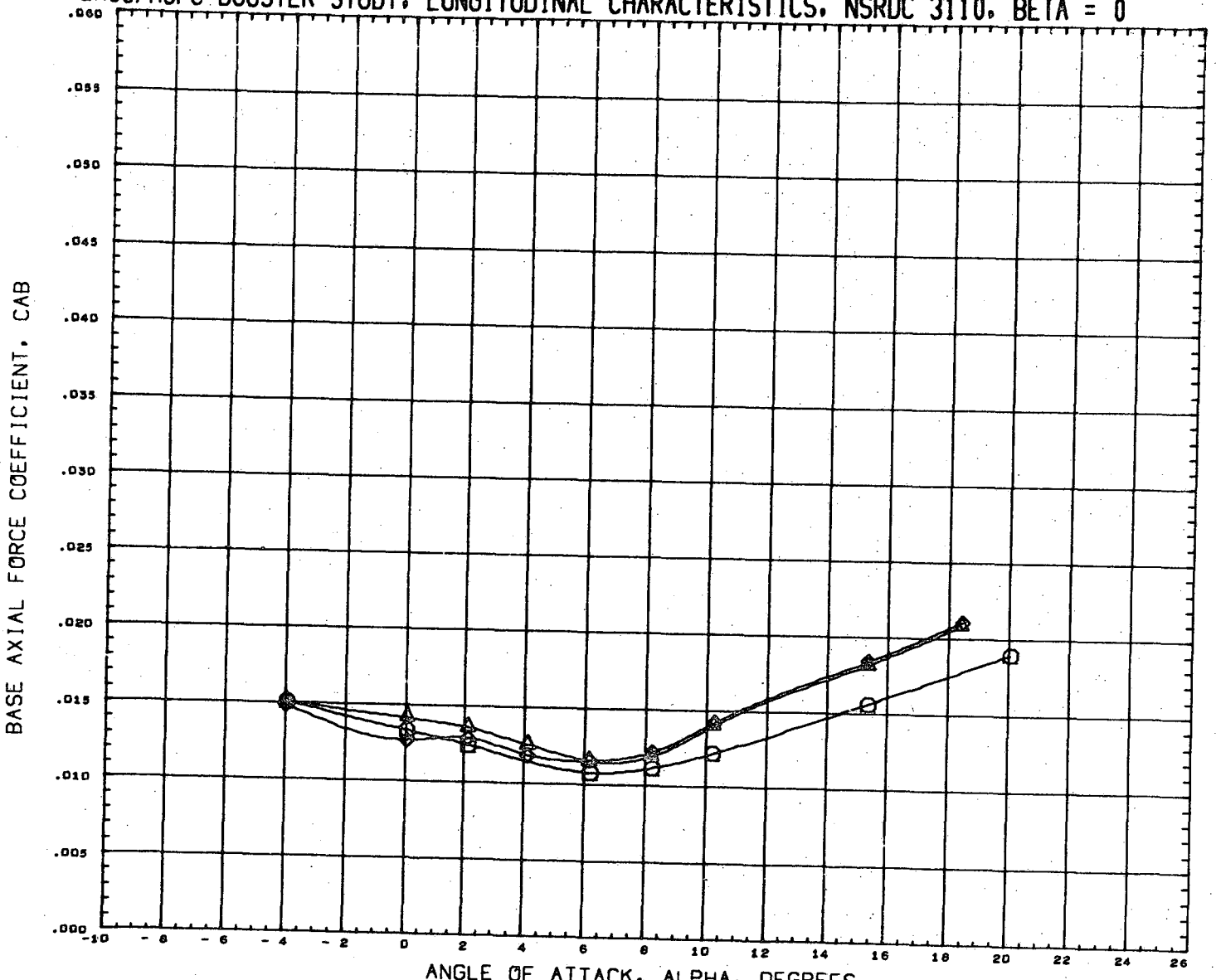


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGFOS
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000
(RN2561)	⊠	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D2	3.000	1.000	0.000	1.000
(RN2569)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D3	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

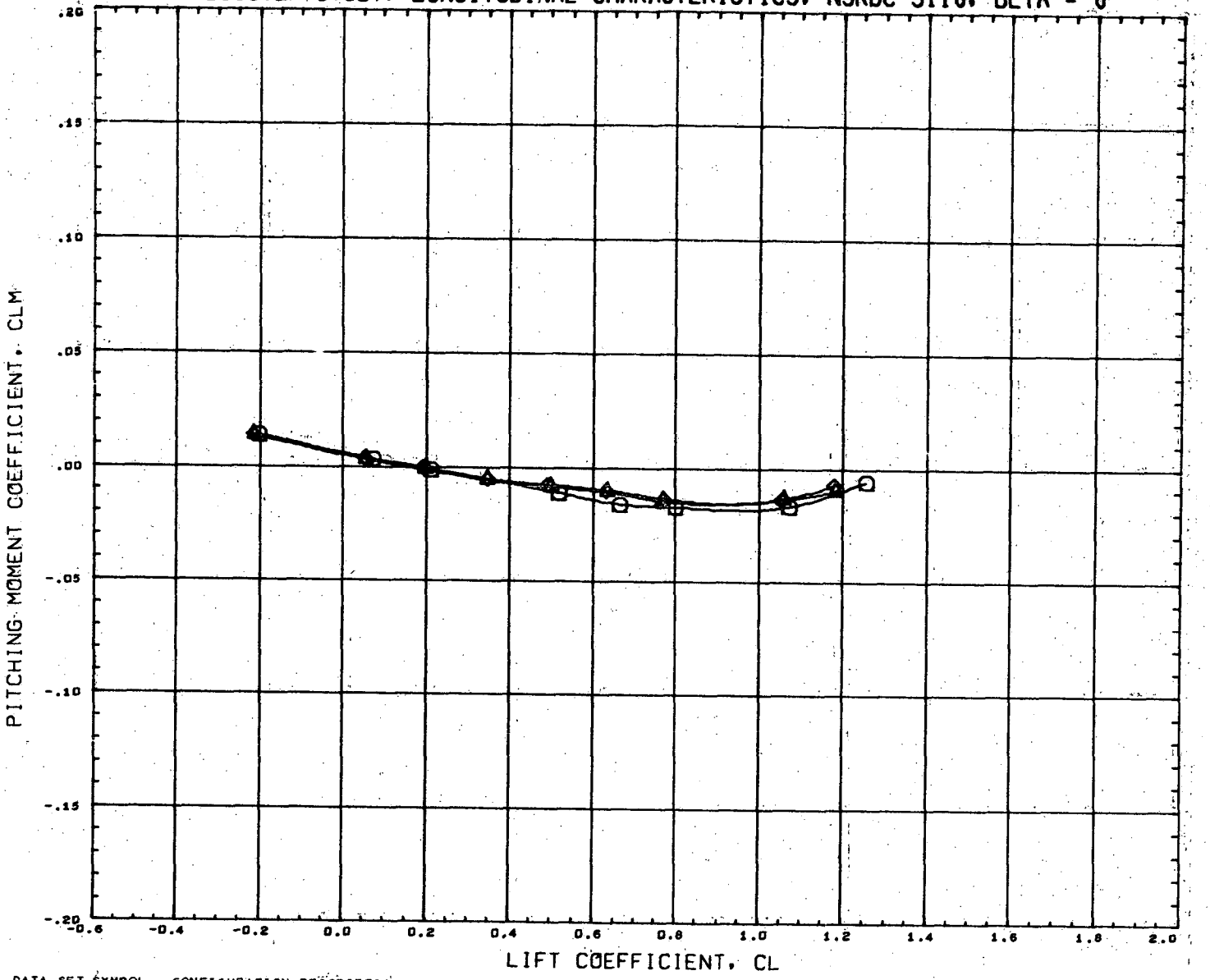


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000
(RN2561)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D2	3.000	1.000	0.000	1.000
(RN2569)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D3	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

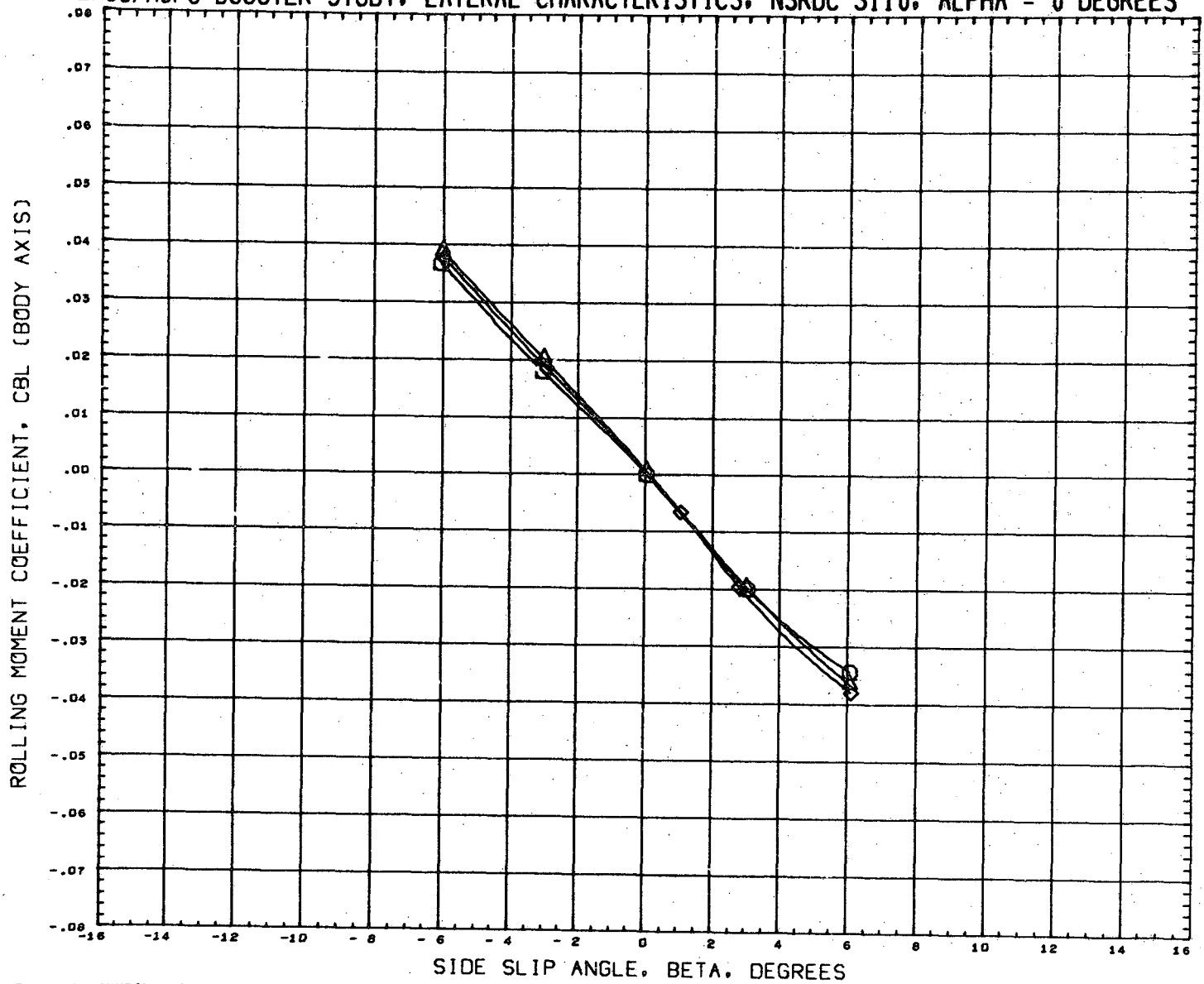


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000
(RN2561)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D2	3.000	1.000	0.000	1.000
(RN2569)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D3	3.000	1.000	0.000	1.000

MACH 0.361

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BØØSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES



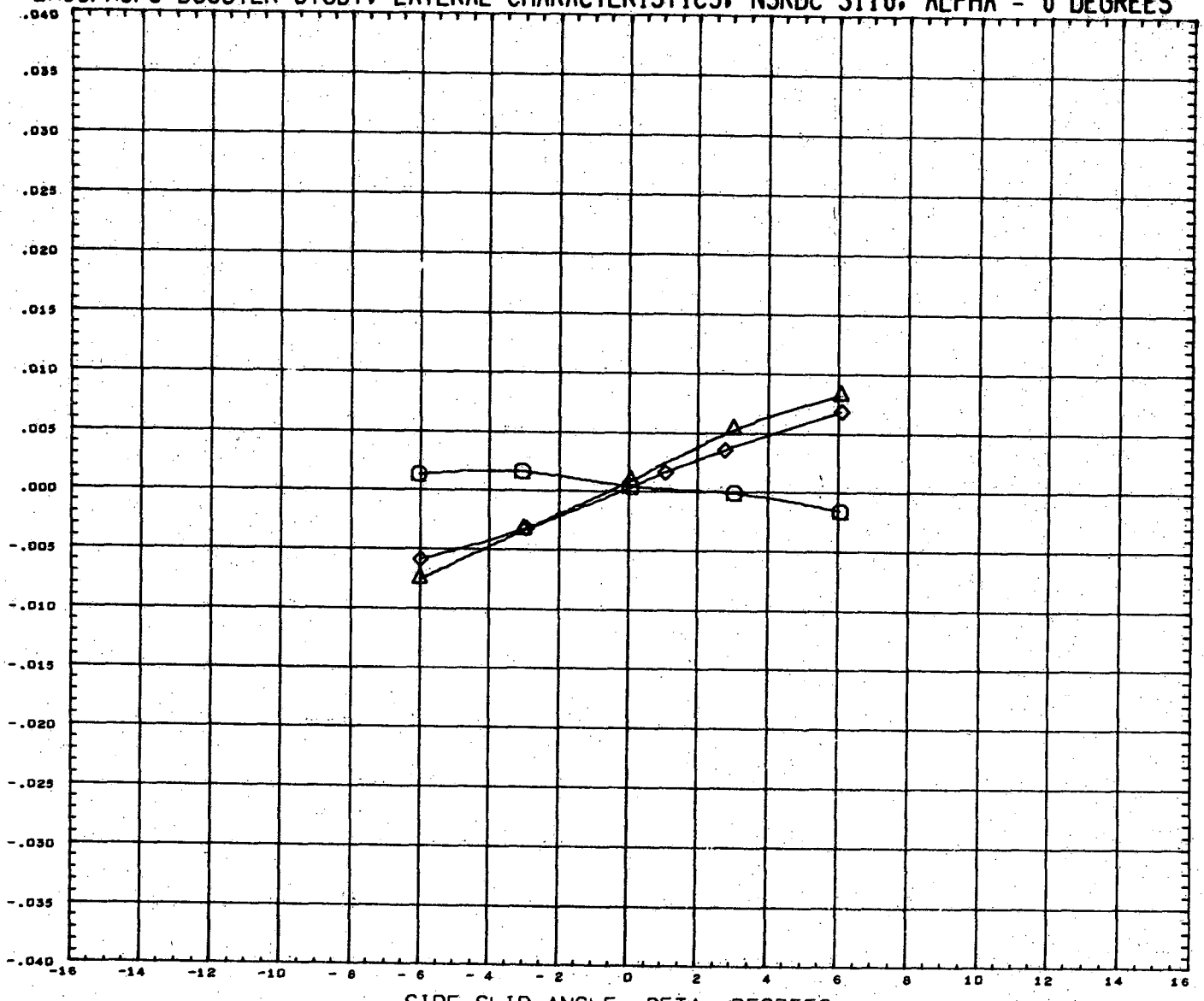
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2002)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2562)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D2
(RN2570)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D3

INCIDC	CNDPOS	INCIDW	WNGPOS
3.000	1.000	0.000	1.000
3.000	1.000	0.000	1.000
3.000	1.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

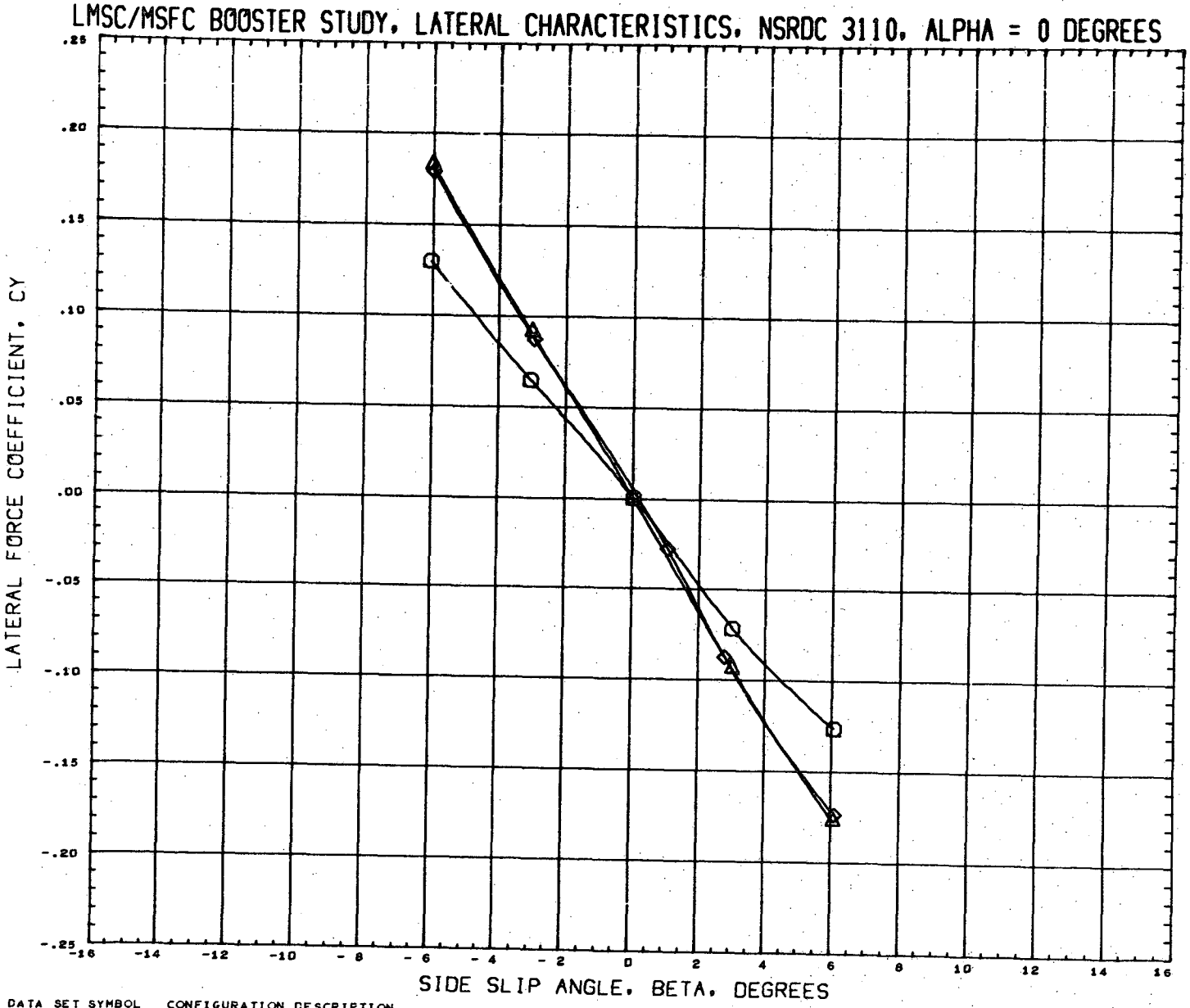
LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2002) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000
(RN2562) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D2	3.000	1.000	0.000	1.000
(RN2570) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D3	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2002)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2562)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D2
(RN2570)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1D3

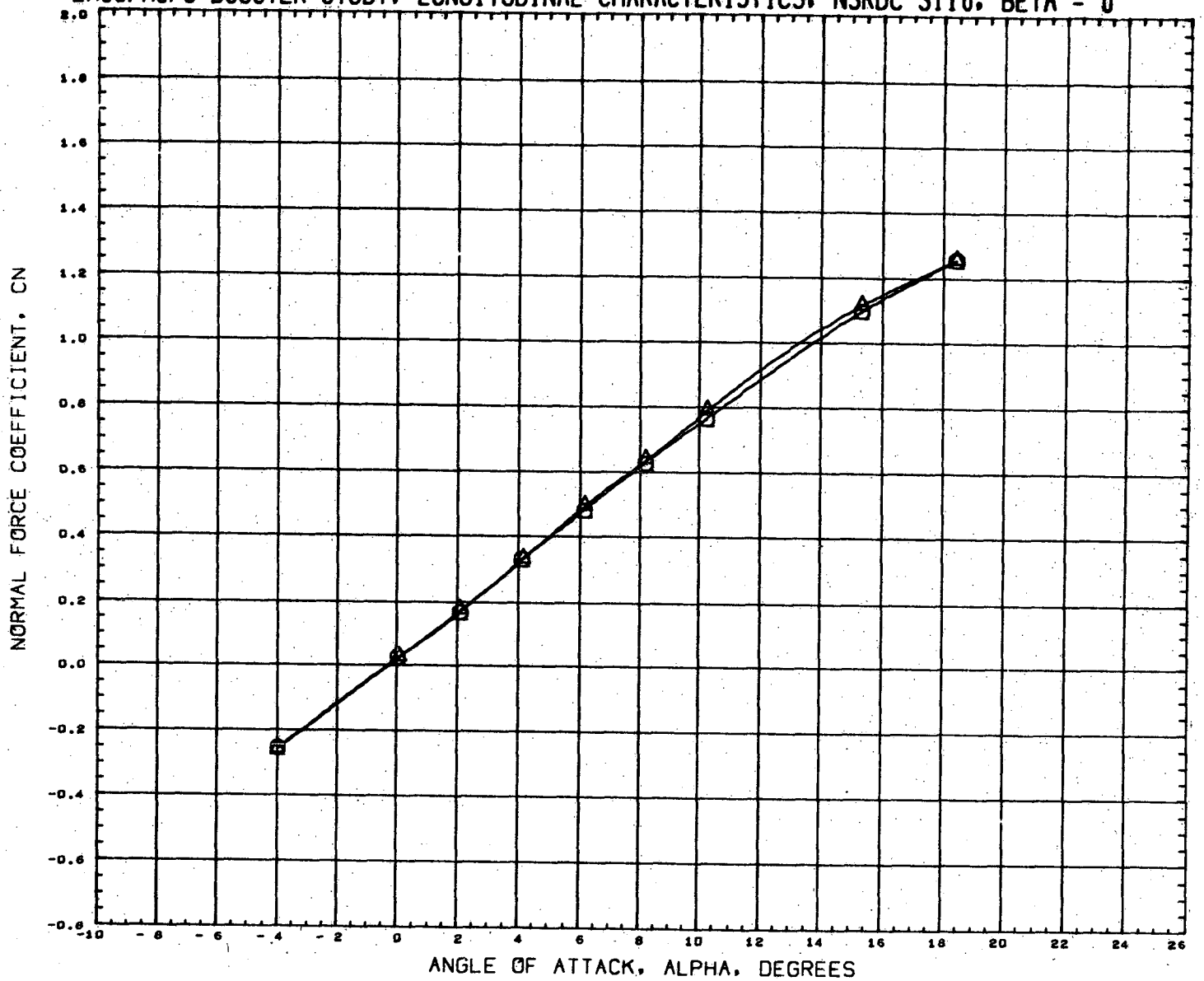
INCIDC	CNDPOS	INCIDW	WNGPOS
3.000	1.000	0.000	1.000
3.000	1.000	0.000	1.000
3.000	1.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

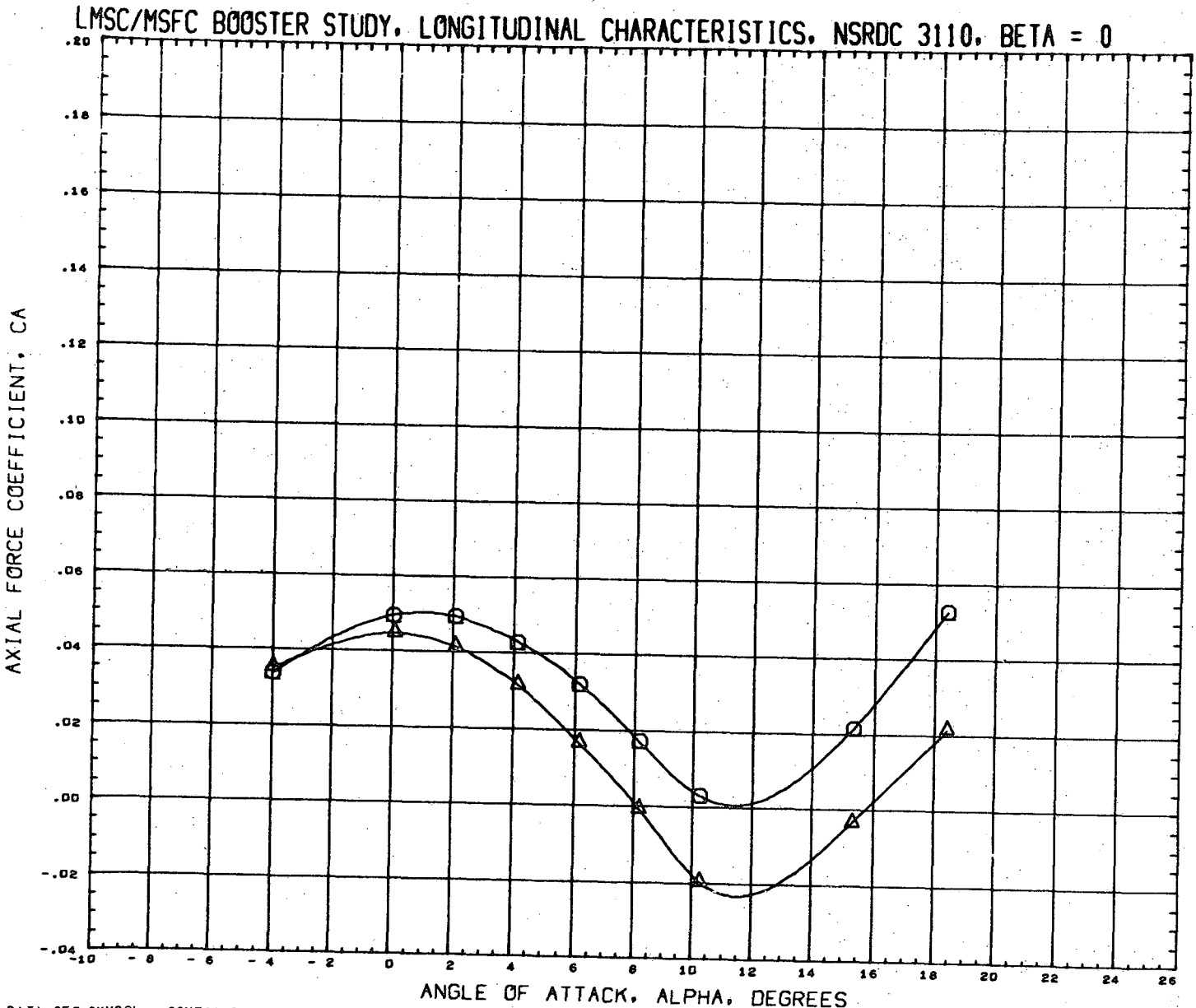
LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2193)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V2D1	3.000	1.000	0.000	1.000
(RN2553)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1V2W1	3.000	1.000	0.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

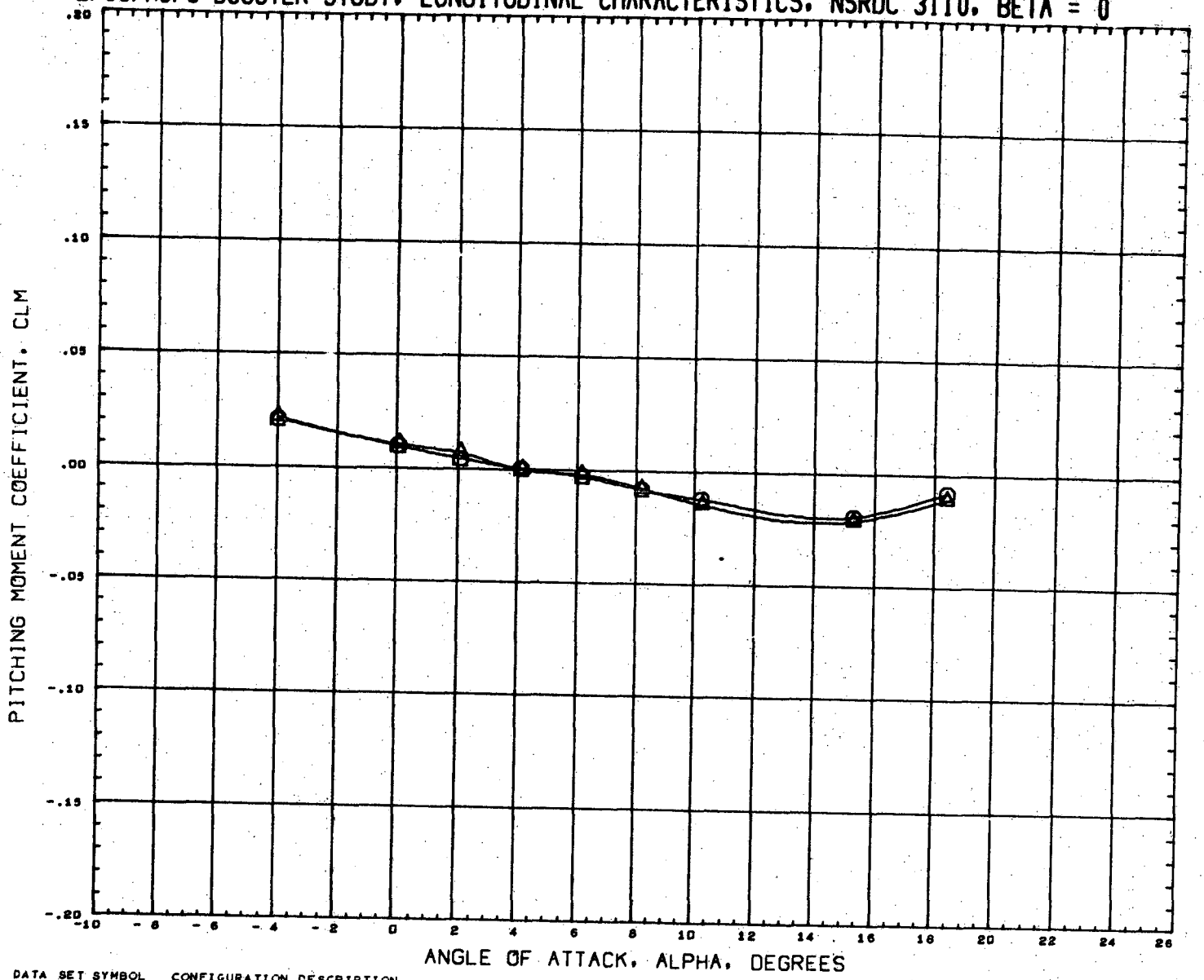


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2193)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V2D1	3.000	1.000	0.000	1.000
(RN2553)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1V2W1	3.000	1.000	0.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

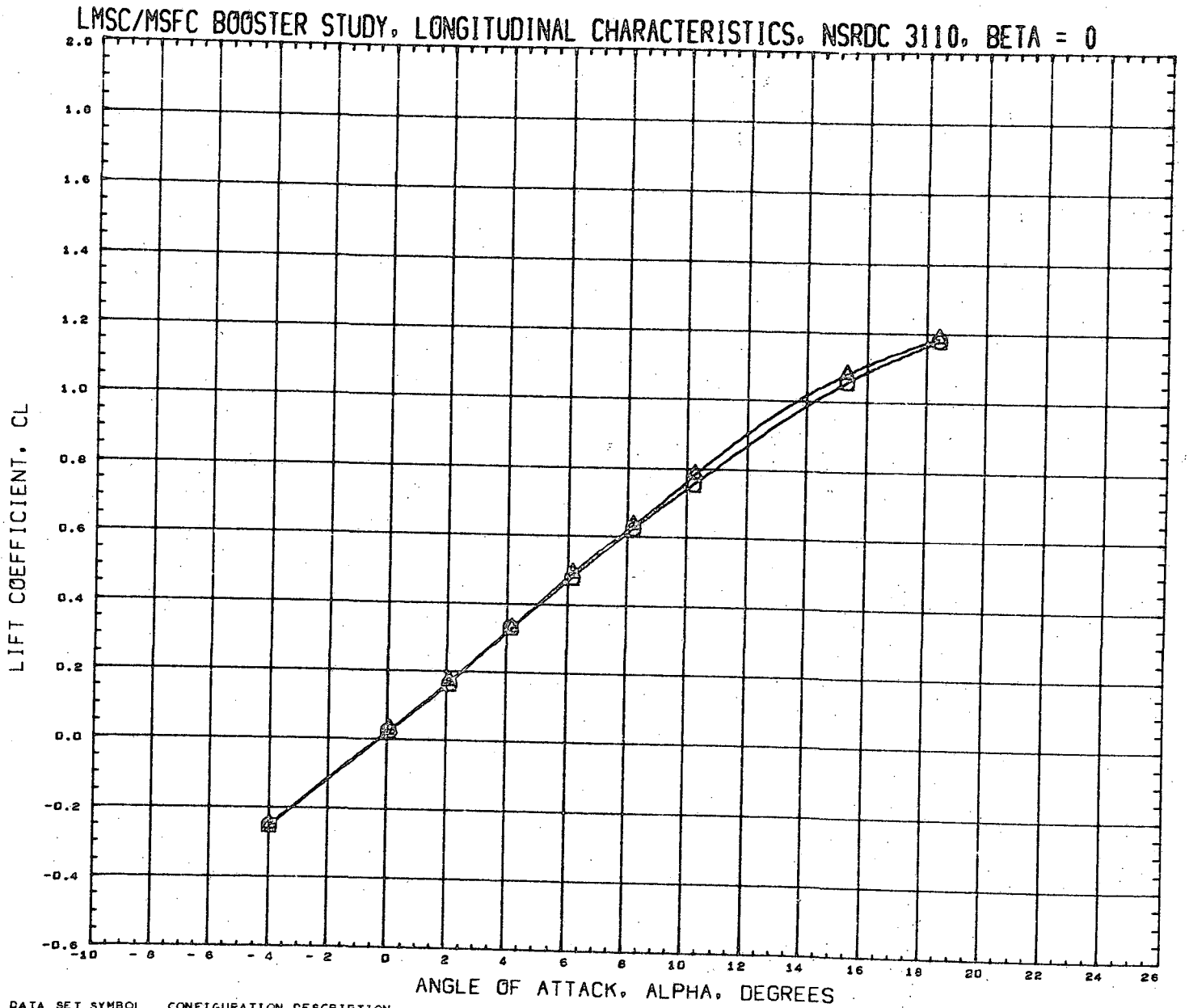
LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDFOS	INCIDW	WNGPOS
(RN2193)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V2D1	3.000	1.000	0.000	1.000
(RN2553)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1V2W1	3.000	1.000	0.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

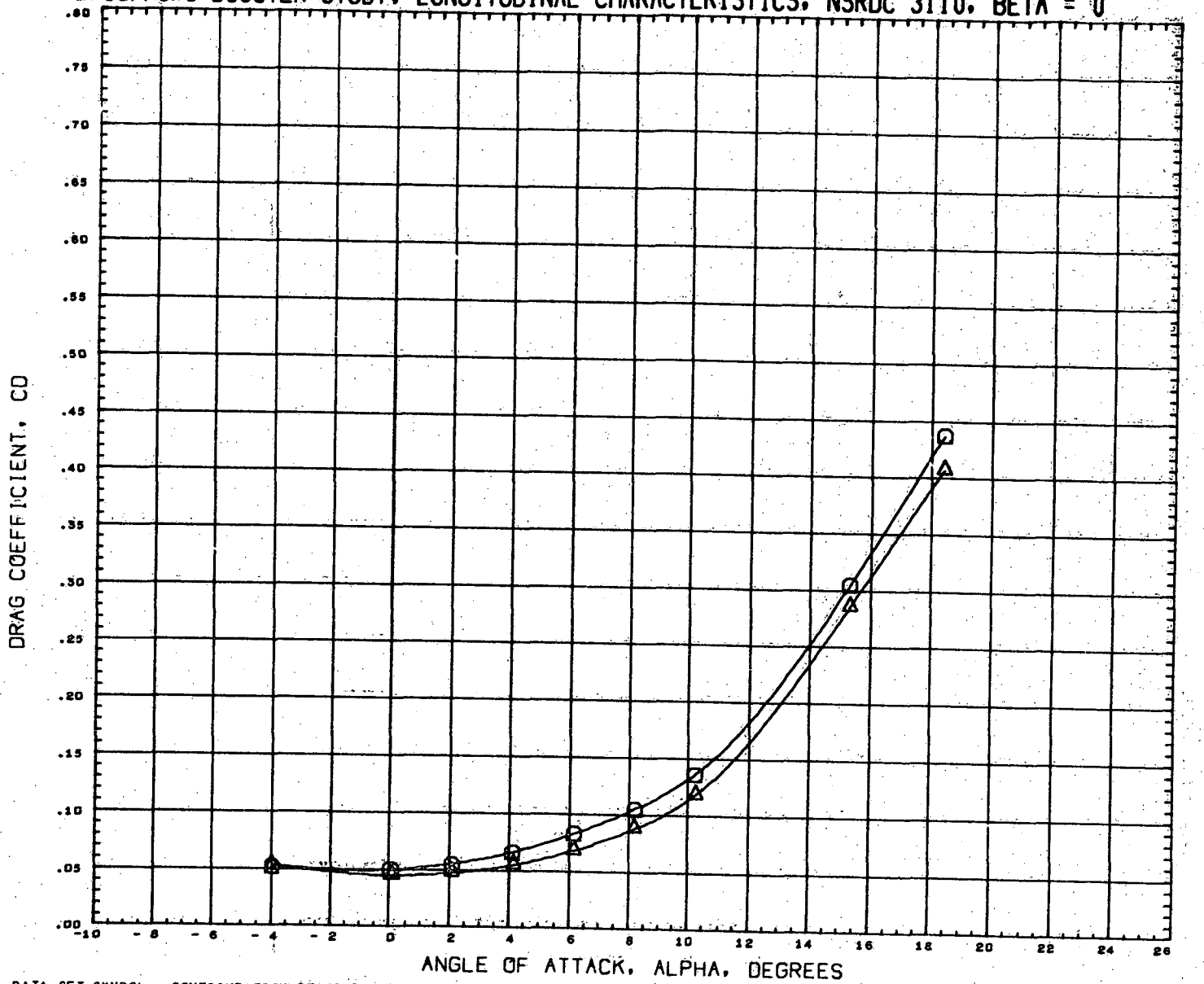


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDFOS	INCIDW	WNGFOS
(RN2193)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V2D1	3.000	1.000	0.000	1.000
(RN2553)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1V2W1	3.000	1.000	0.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

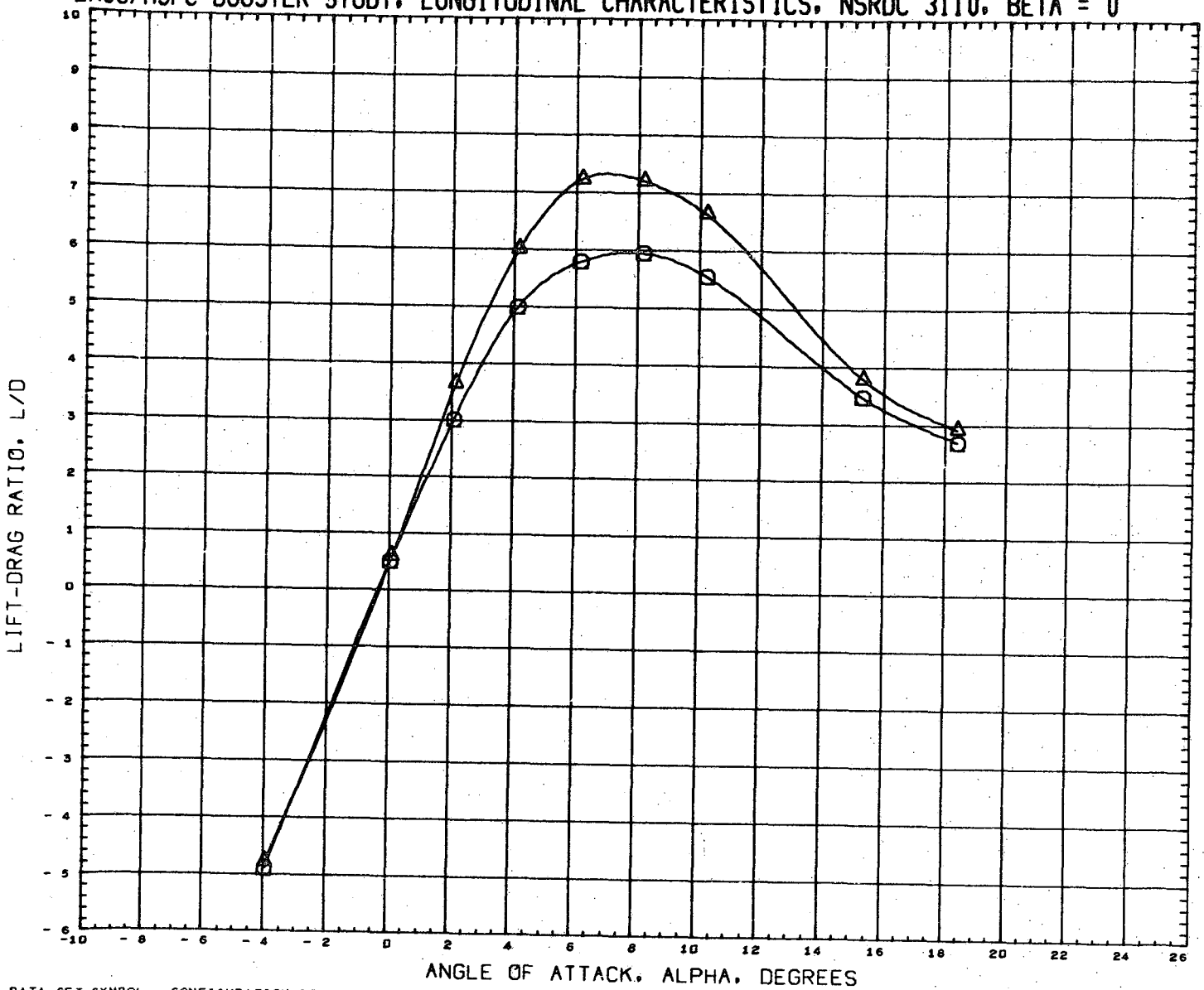


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2193)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V2D1	3.000	1.000	0.000	1.000
(RN2553)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1V2W1	3.000	1.000	0.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

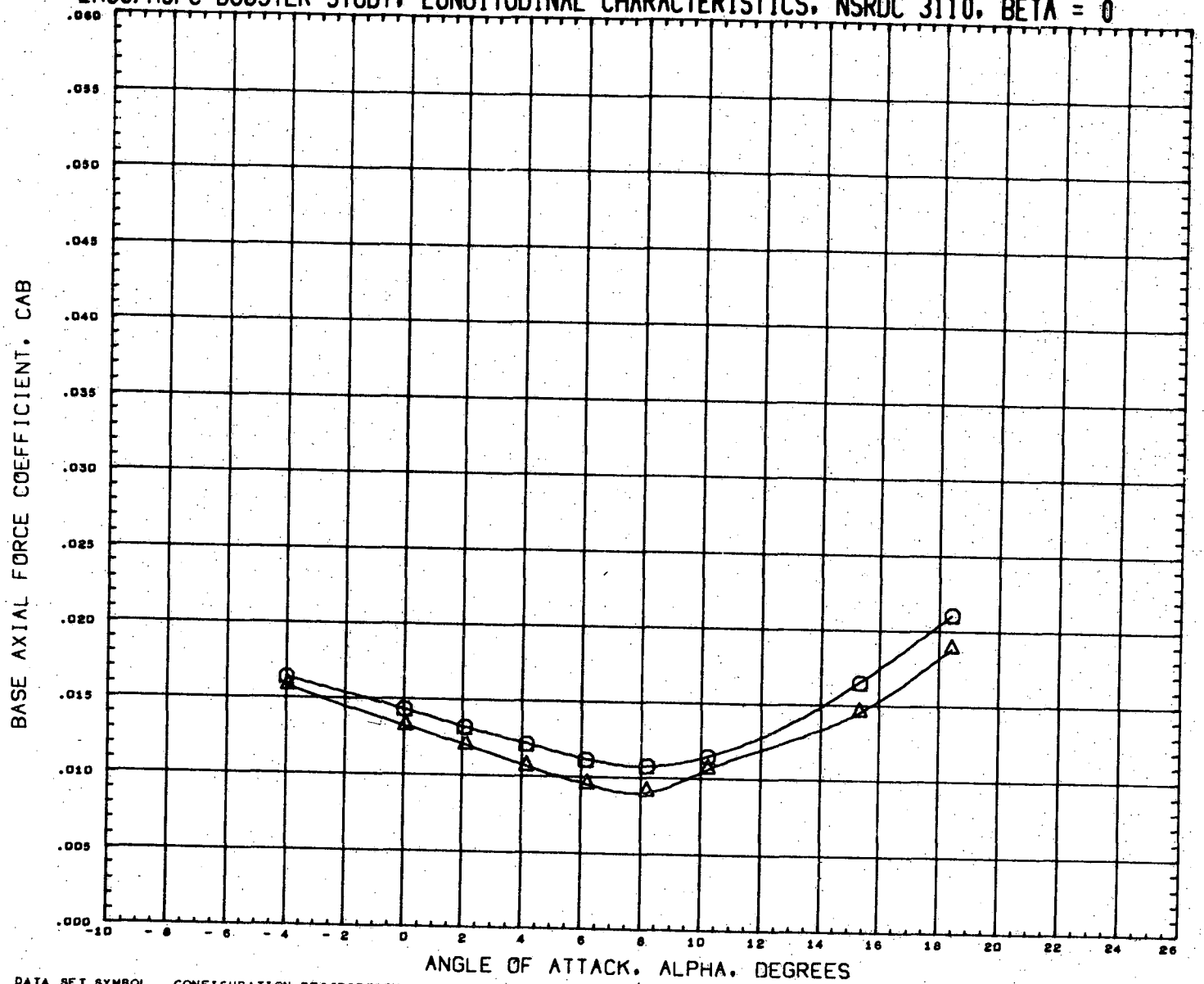


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2193)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V2D1	3.000	1.000	0.000	1.000
(RN2553)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1V2W1	3.000	1.000	0.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

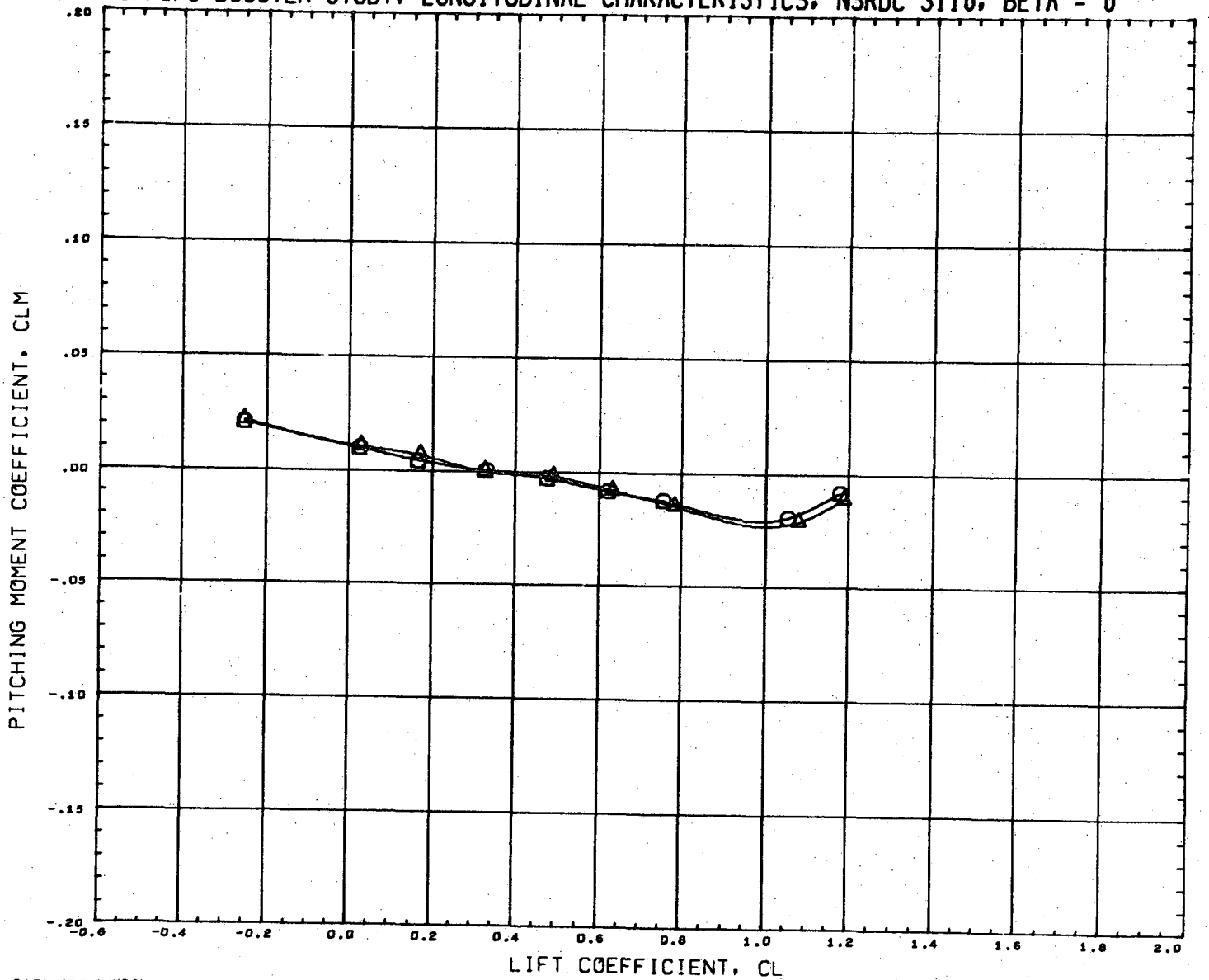


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2193) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V2D1	3.000	1.000	0.000	1.000
(RN2553) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1V2W1	3.000	1.000	0.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

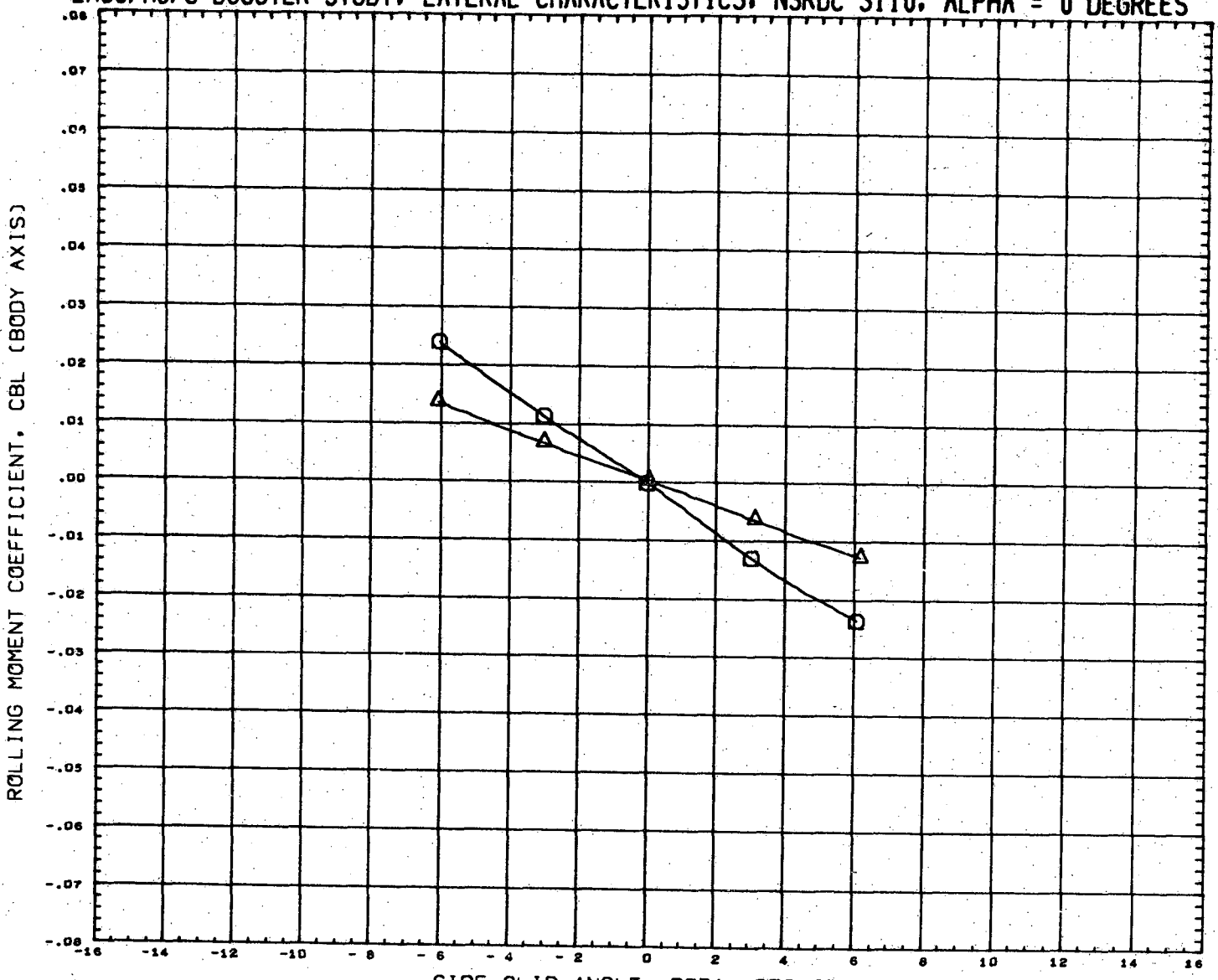


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2193)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V2D1	3.000	1.000	0.000	1.000
(RN2553)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1V2W1	3.000	1.000	0.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES

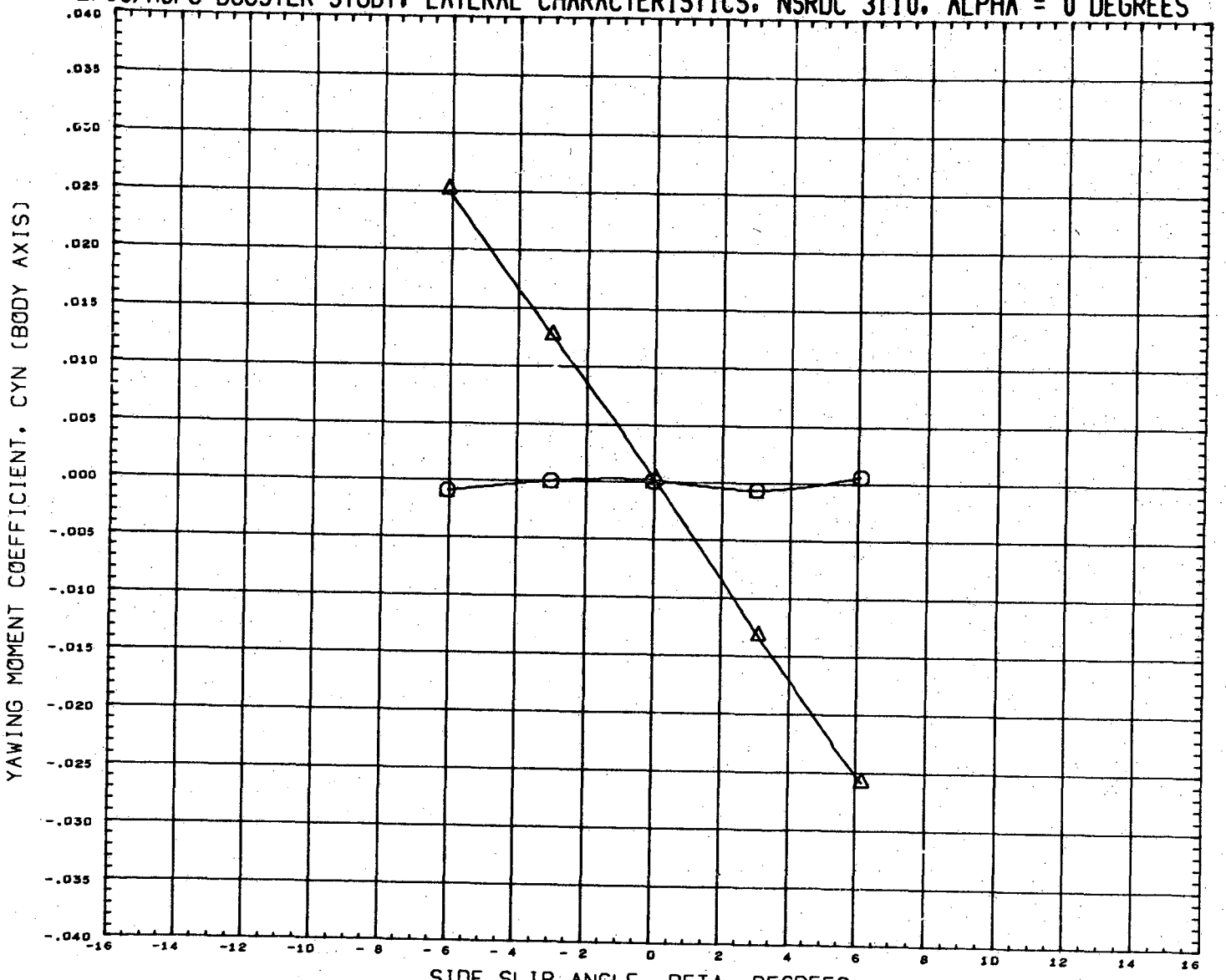


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2194)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V2D1	3.000	1.000	0.000	1.000
(RN2554)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1V2W1	3.000	1.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.377

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES

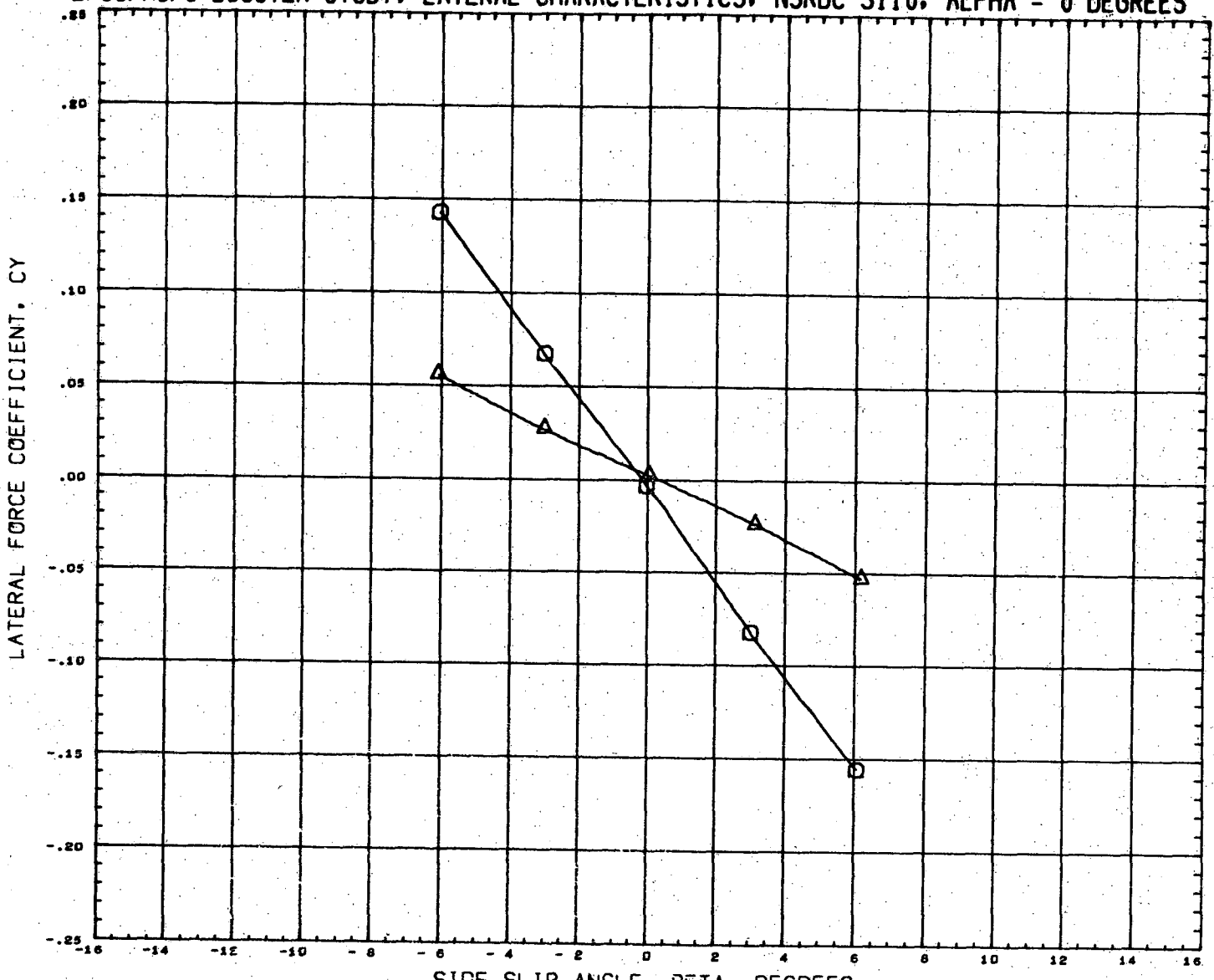


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2194) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V2D1	3.000	1.000	0.000	1.000
(RN2554) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1V2W1	3.000	1.000	0.000	1.000

MACH 0.377

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES

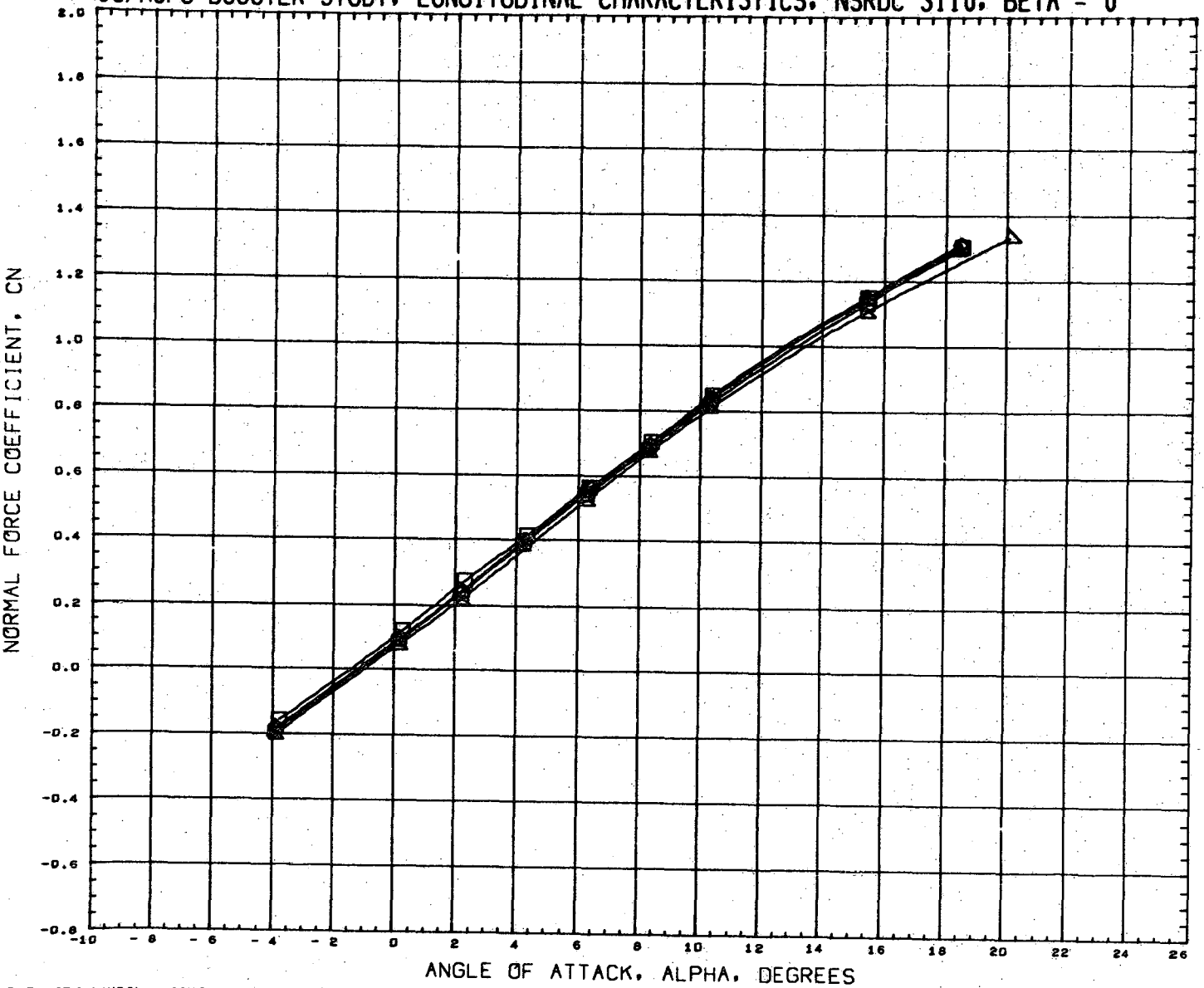


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNCPOS	INCIDW	WNGPOS
(RN2194)	○	NSRDC-311D,MSFC/LMSC BOOSTER B1C2F1W1V2D1	3.000	1.000	0.000	1.000
(RN2534)	△	NSRDC-311D,MSFC/LMSC BOOSTER B1C2F1V2W1	3.000	1.000	0.000	1.000

MACH 0.377

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2541)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2545)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2325)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2001)	▷	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

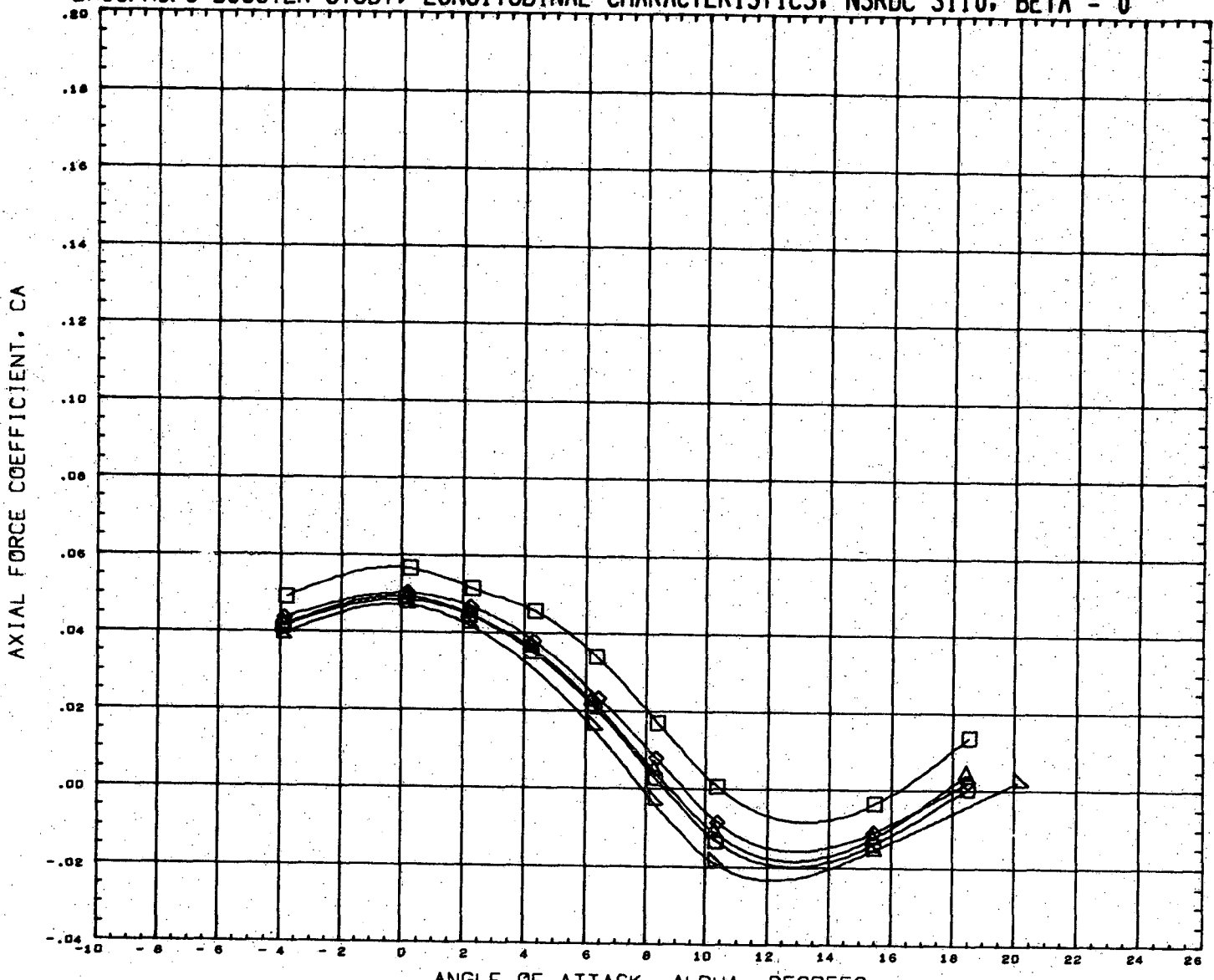
MACH 0.381

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
0.000	3.000	1.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0

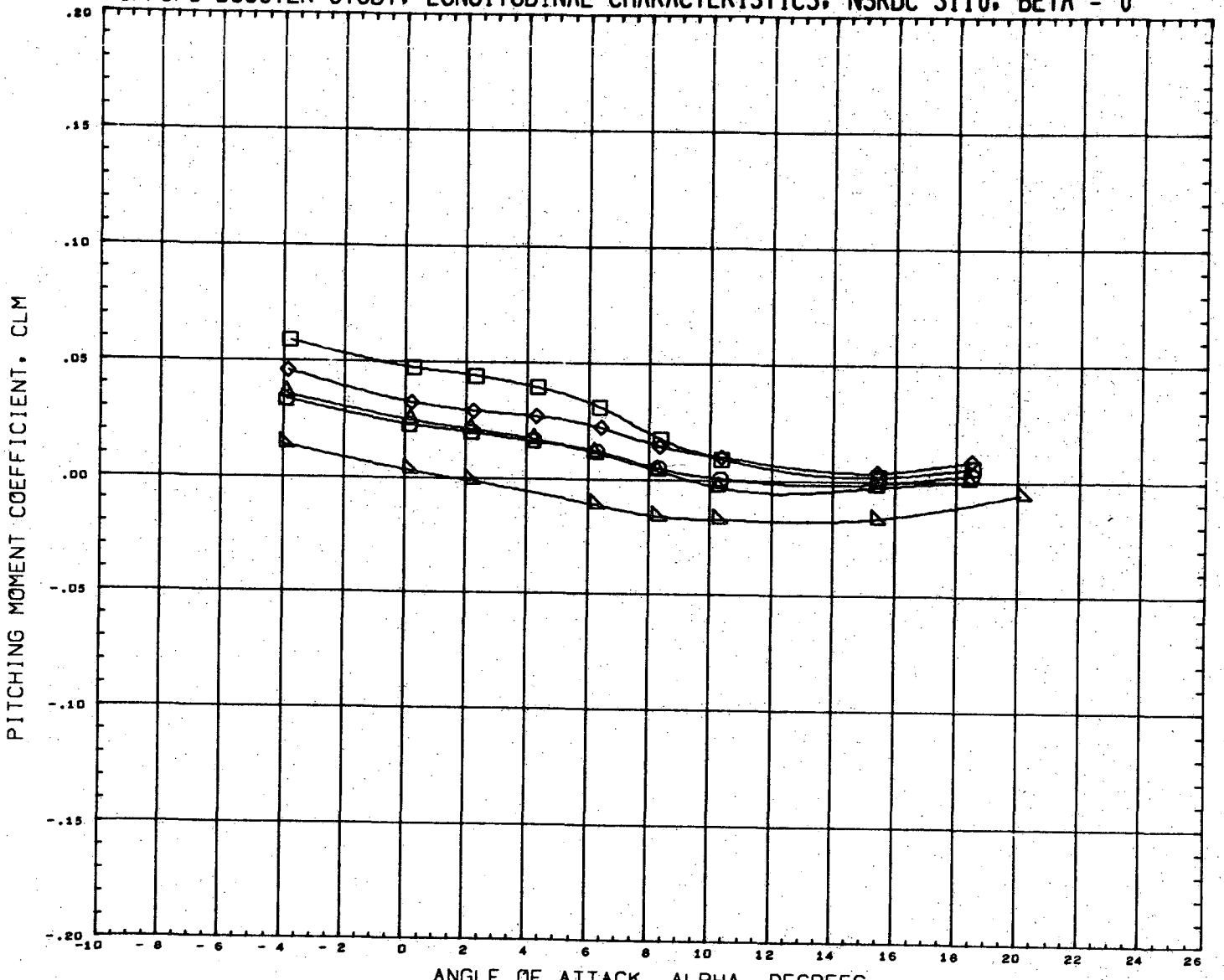


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	CANARD	INCIDC	CNDPOS	WNGPOS
(RN2541)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	10.000	3.000	1.000	1.000
(RN2321)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	10.000	3.000	1.000	1.000
(RN2545)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	20.000	3.000	1.000	1.000
(RN2325)	▽	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	20.000	3.000	1.000	1.000
(RN2001)	◸	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	0.000	3.000	1.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



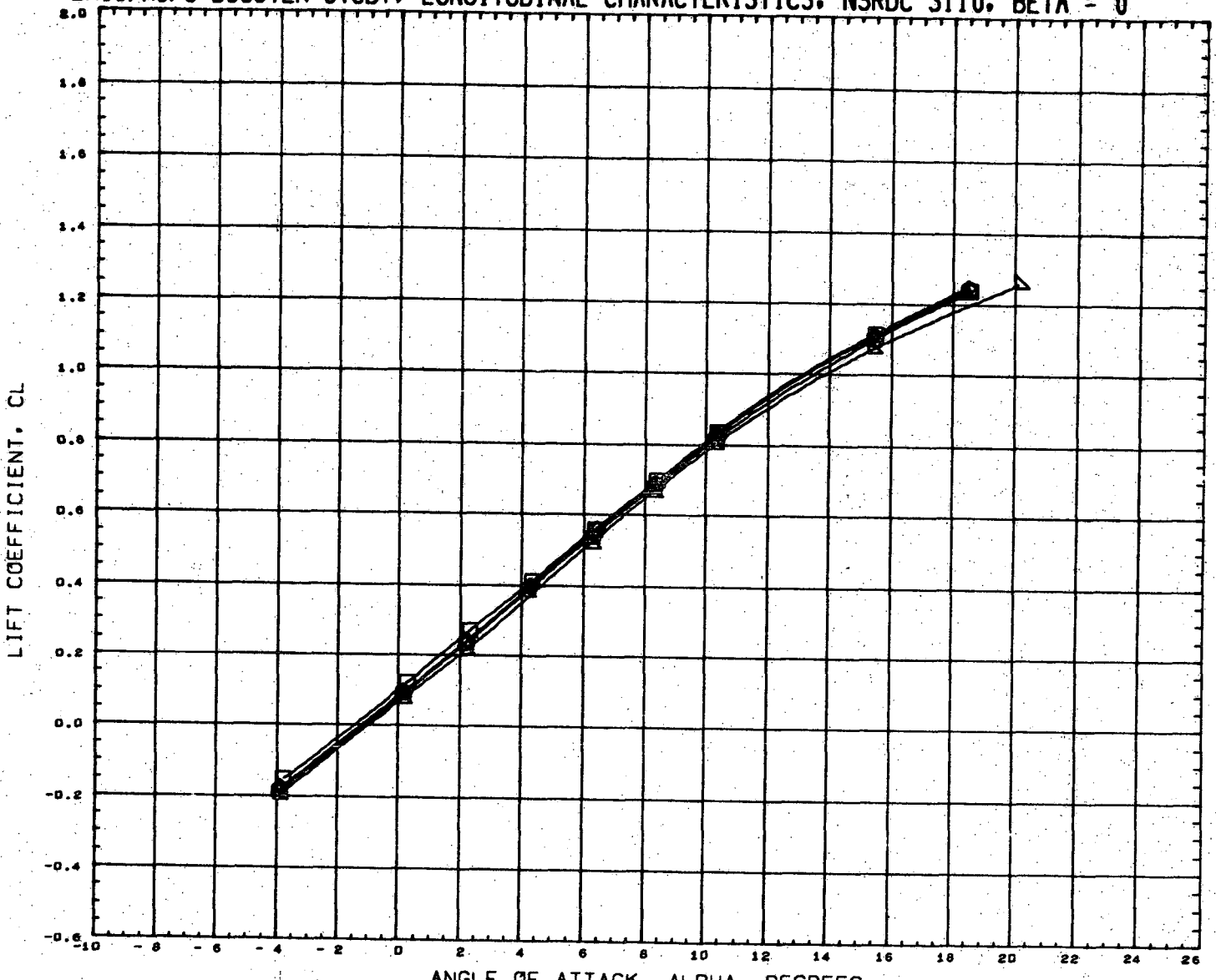
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2541)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2545)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2325)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN200')		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

MACH 0.381

CANARD	INCIDC	CNDFOS	WNGFOS
10.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
0.000	3.000	1.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

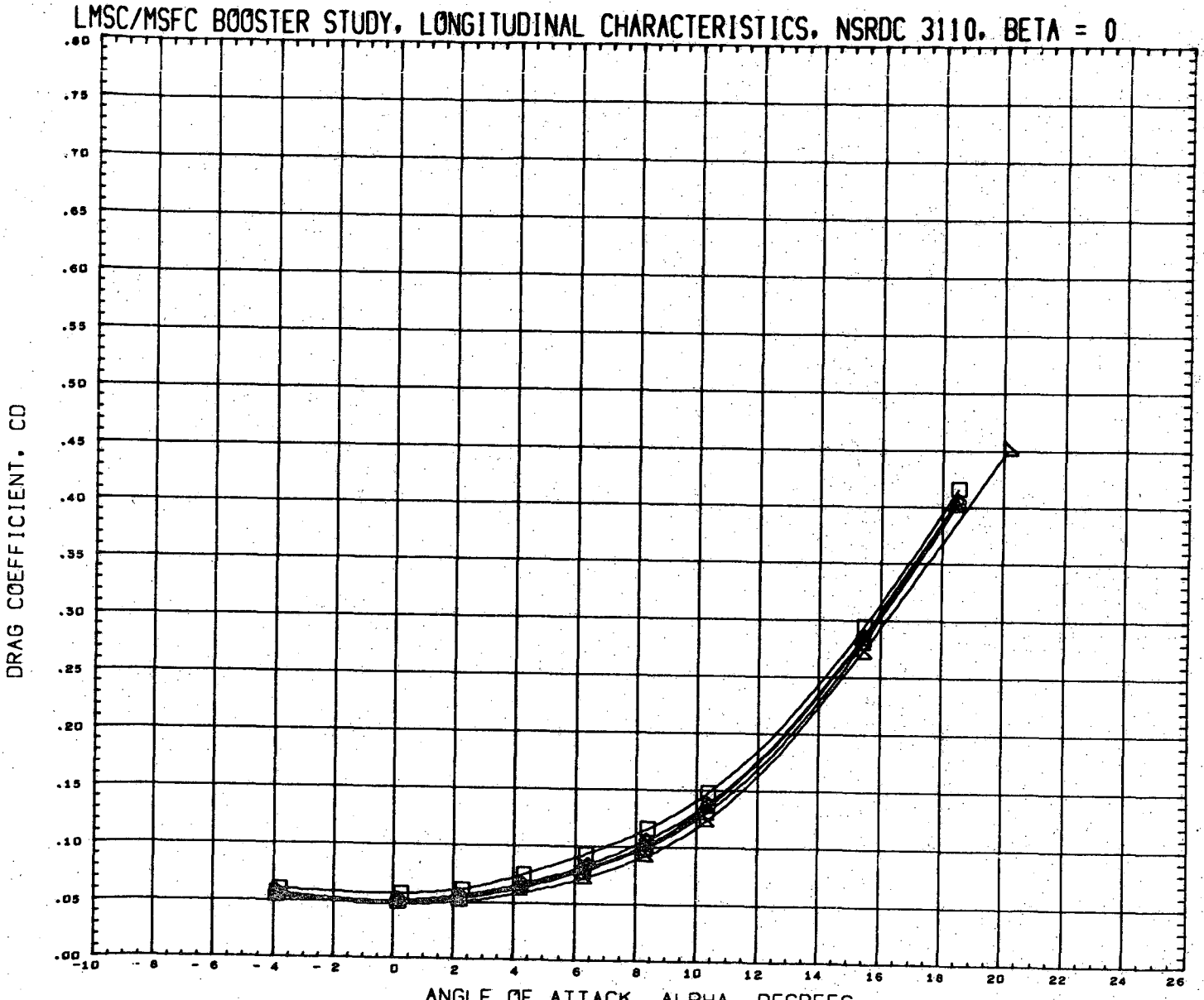


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2541)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2545)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2325)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2001)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

MACH 0.381

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
0.000	3.000	1.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



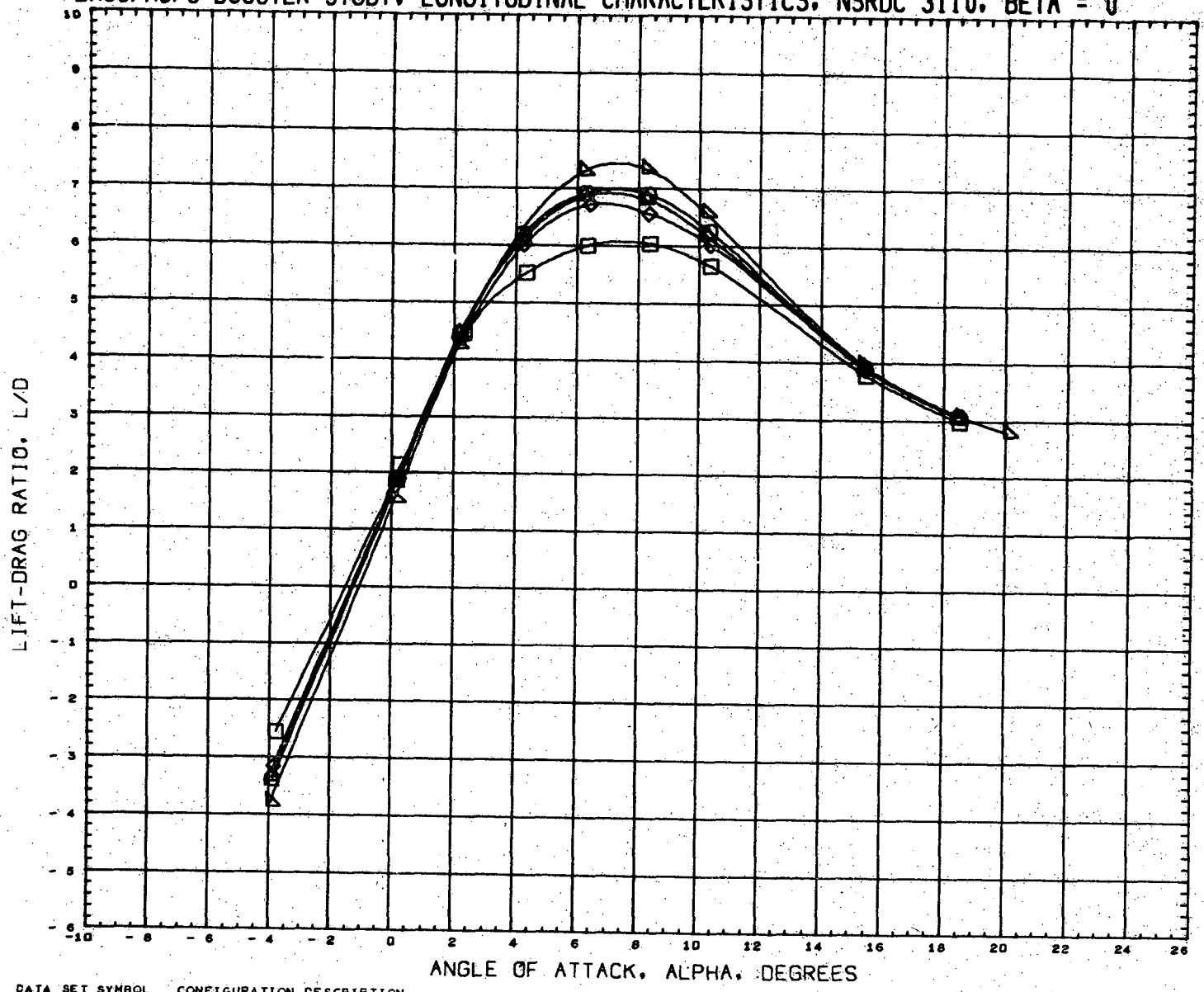
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2541)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2545)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2325)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2001)	▷	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

MACH 0.381

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
0.000	3.000	1.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0

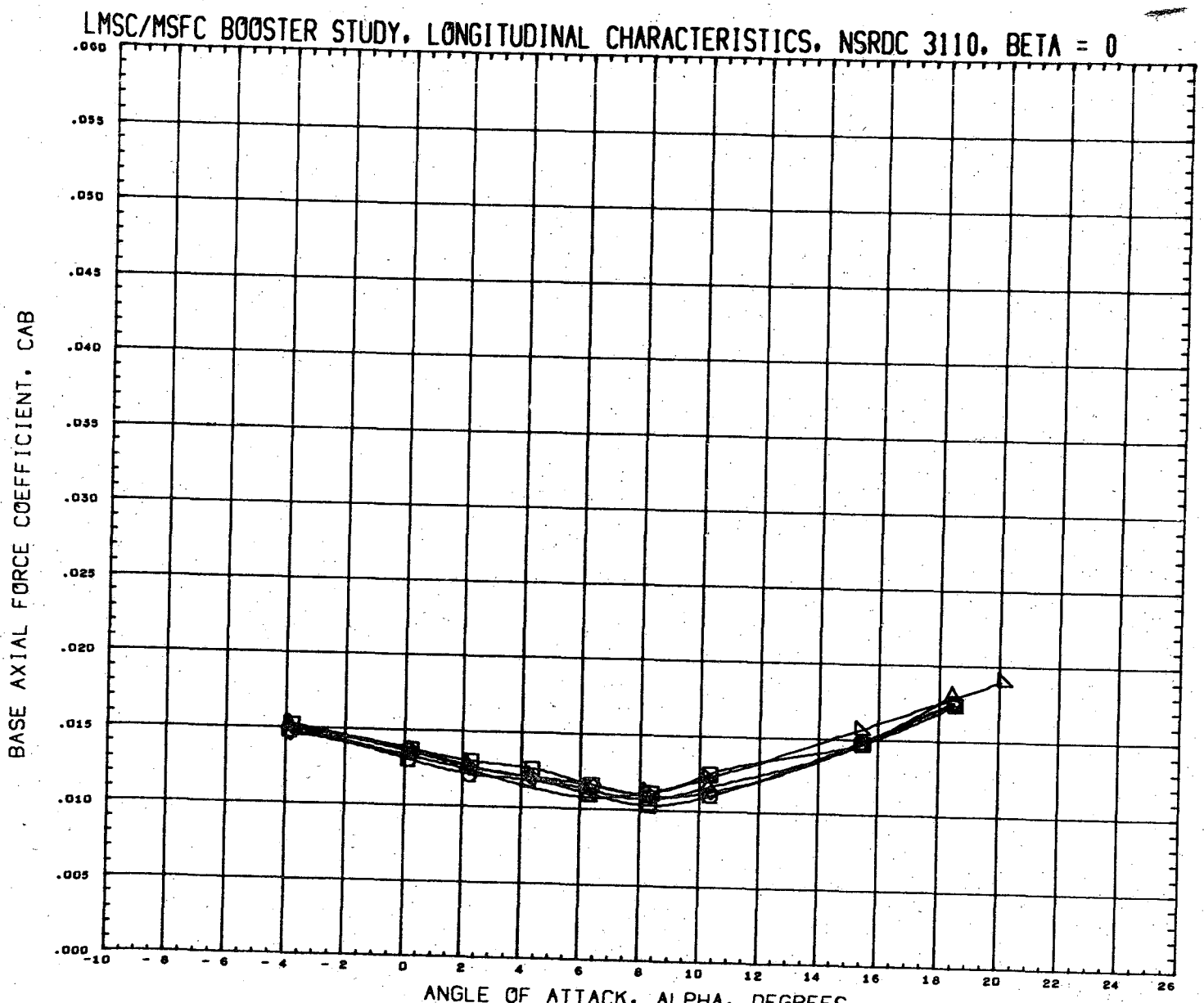


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2541)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2545)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2325)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2001)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

MACH 0.381

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
0.000	3.000	1.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



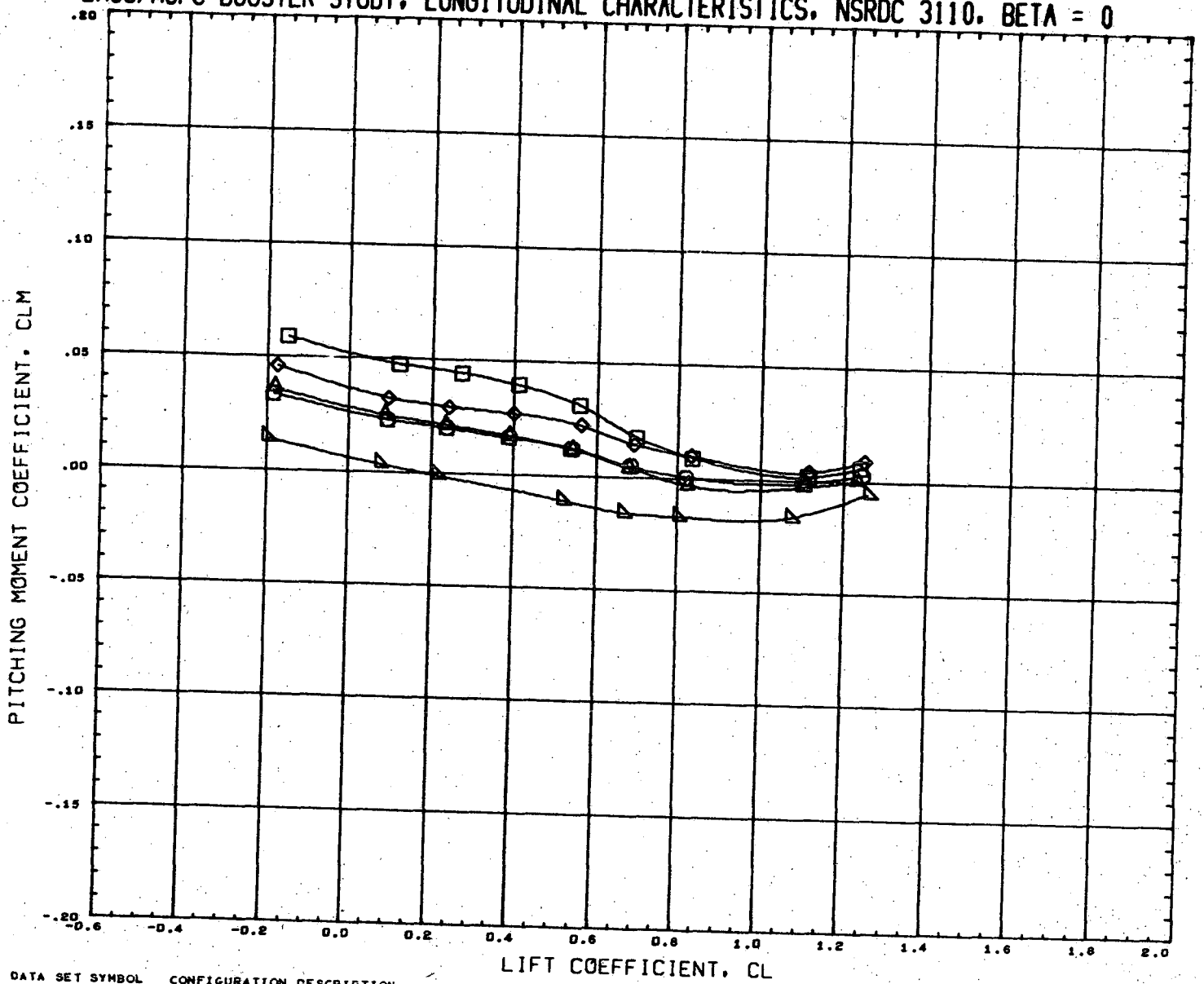
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2541)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2545)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2325)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2001)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

MACH 0.381

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
0.000	3.000	1.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

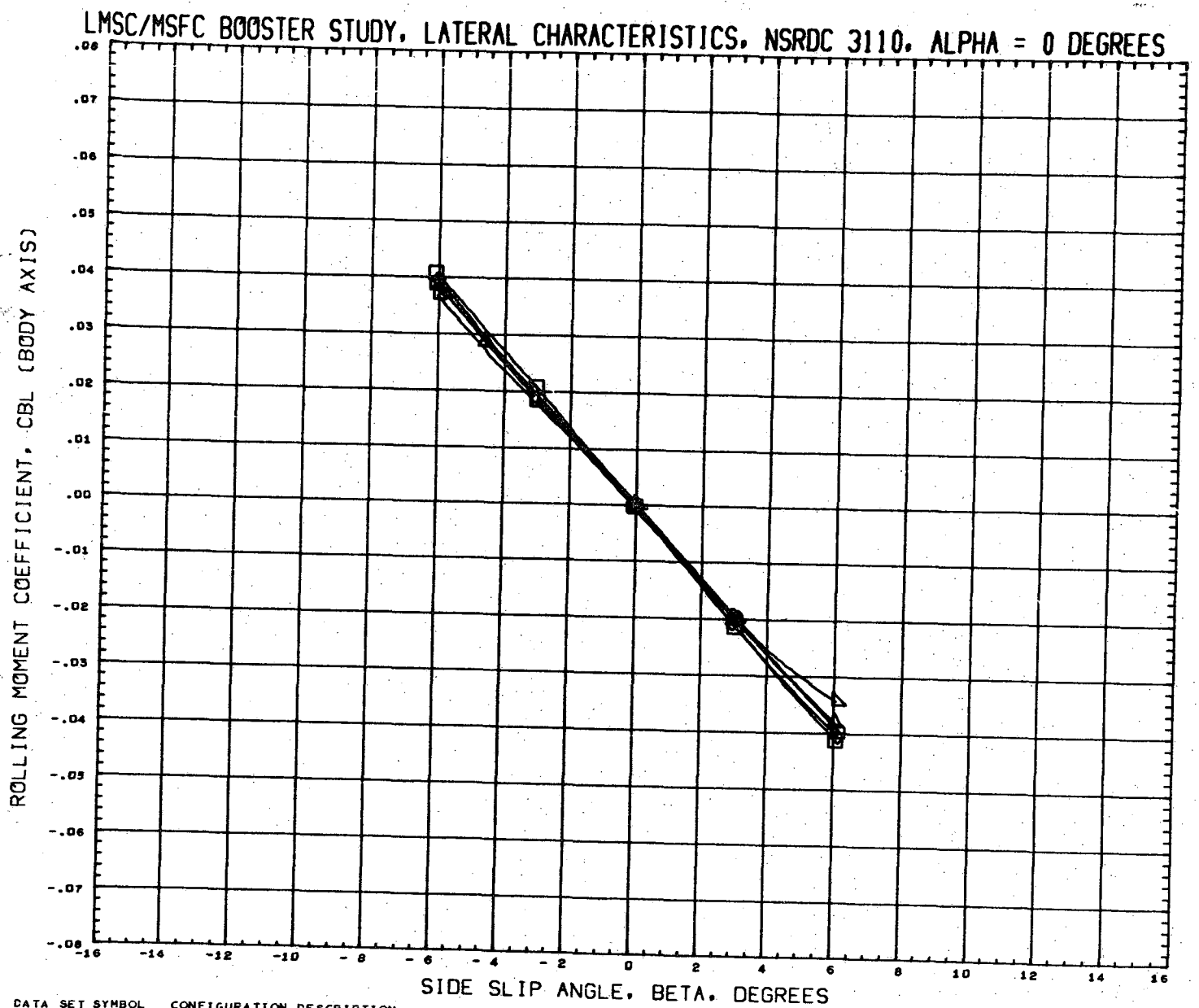
LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	CANARD	INCIDC	CNDPOS	WNGPOS
(RN2541)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	10.000	3.000	1.000	1.000
(RN2321)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	10.000	3.000	1.000	1.000
(RN2545)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	20.000	3.000	1.000	1.000
(RN2325)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	20.000	3.000	1.000	1.000
(RN2001)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	0.000	3.000	1.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2542)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2322)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2546)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2326)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN200?)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

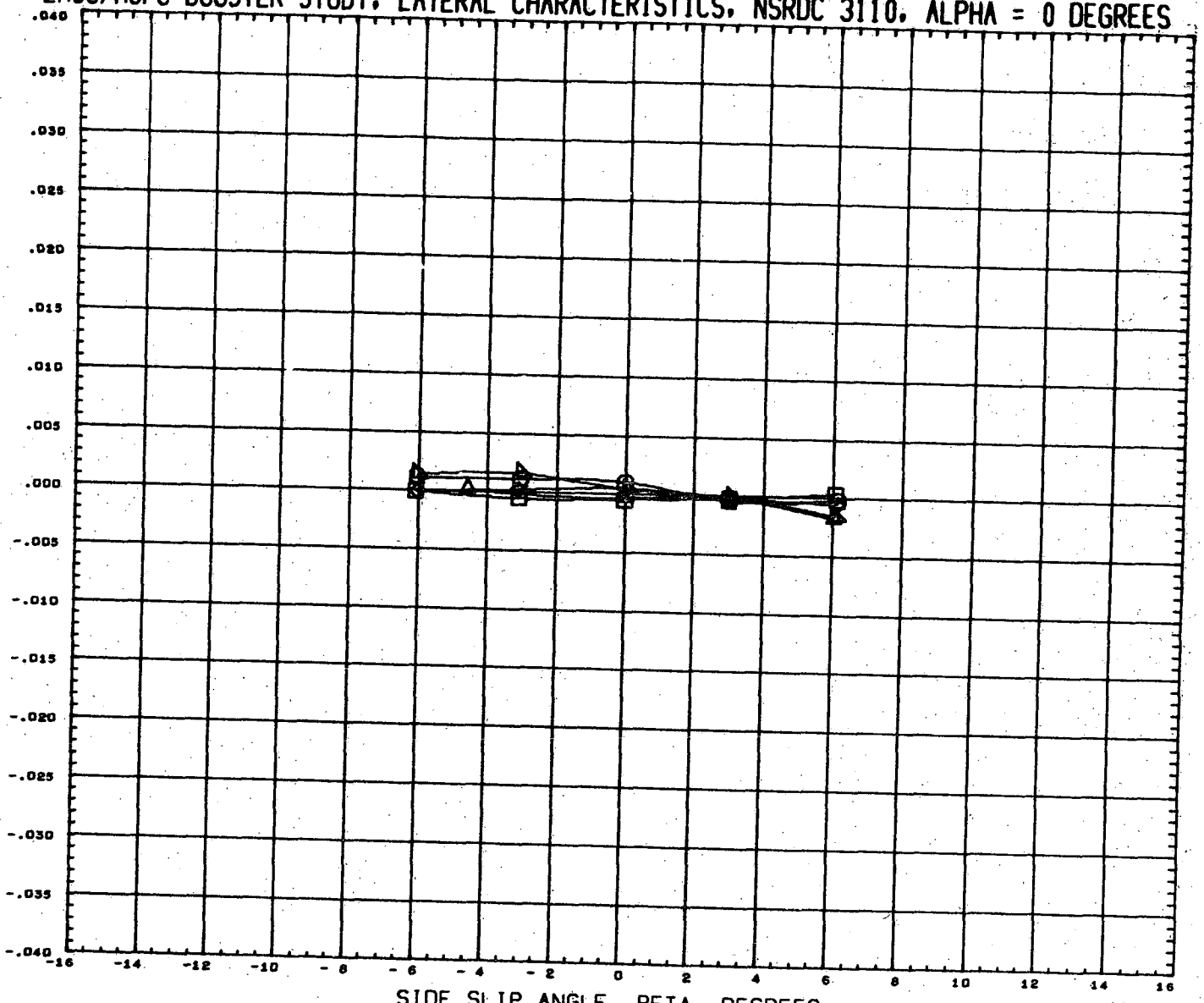
MACH 0.381

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
0.000	3.000	1.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



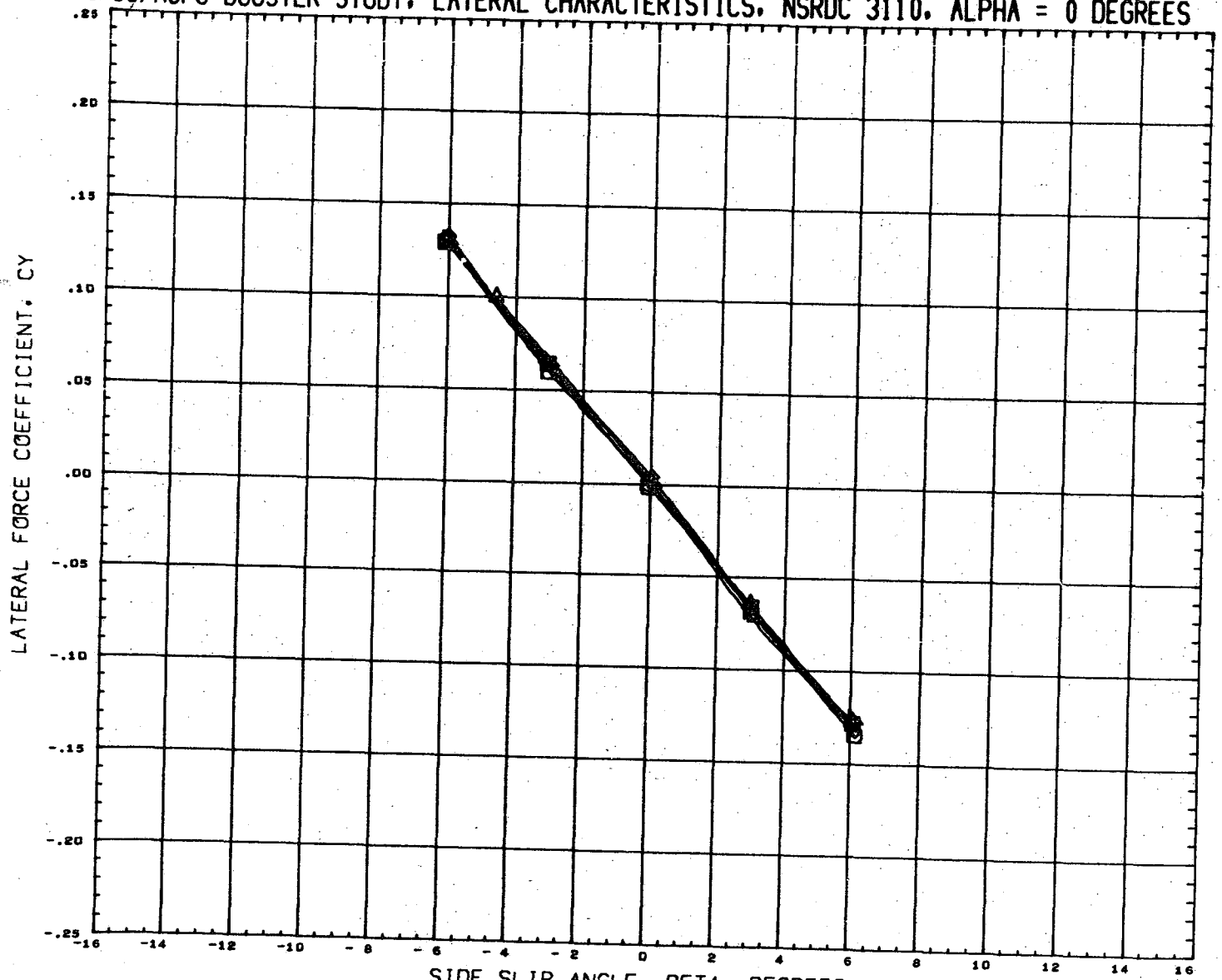
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2542)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2322)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2546)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2326)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2002)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

MACH 0.381

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000
0.000	3.000	1.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



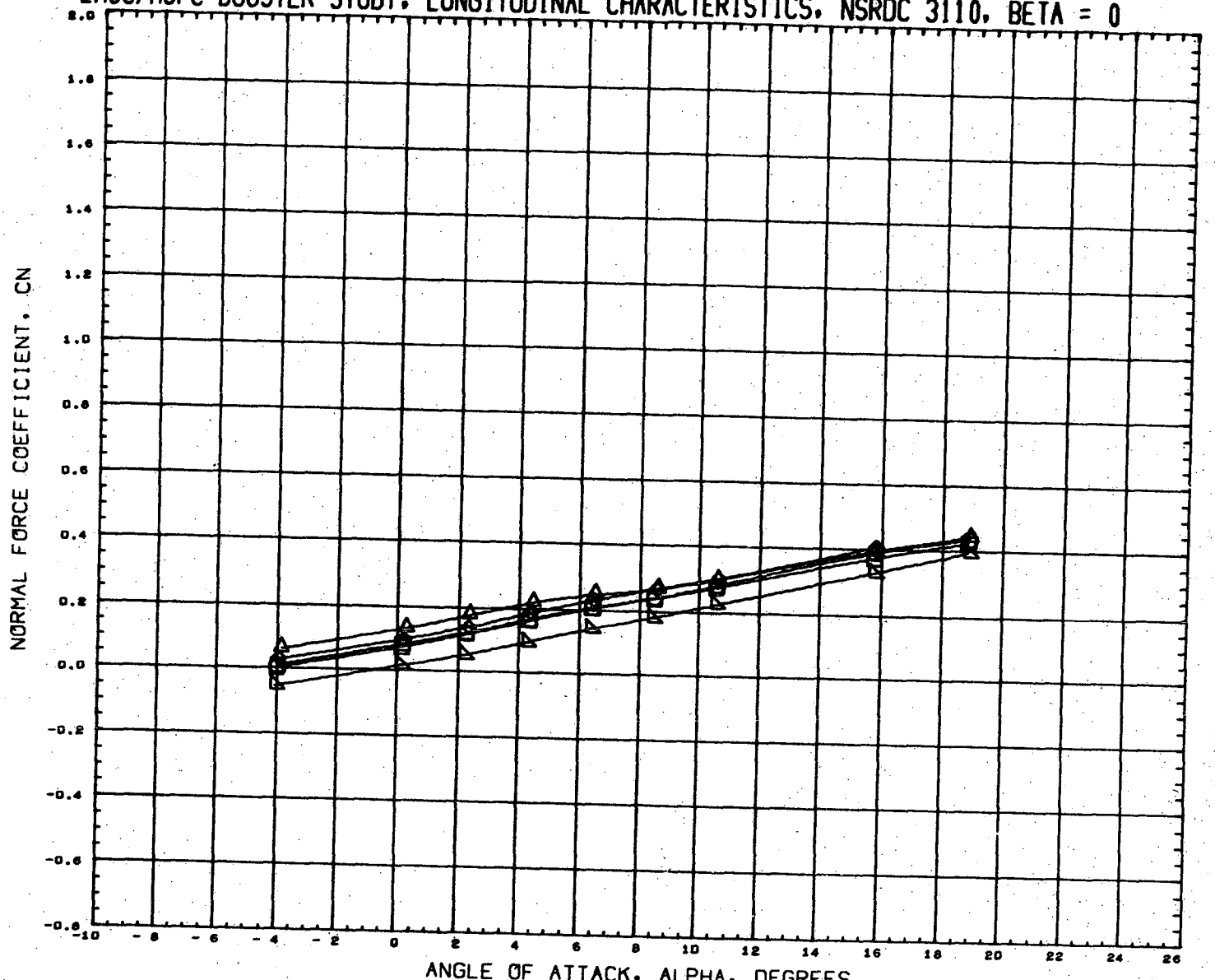
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	CANARD	INCIDC	CNDPOS	WNGPOS
(RN2542)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	10.000	3.000	1.000	1.000
(RN2322)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	10.000	3.000	1.000	1.000
(RN2546)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	20.000	3.000	1.000	1.000
(RN2326)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	20.000	3.000	1.000	1.000
(RN2002)	▽	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	0.000	3.000	1.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2441)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2449)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2445)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2453)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2437)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1

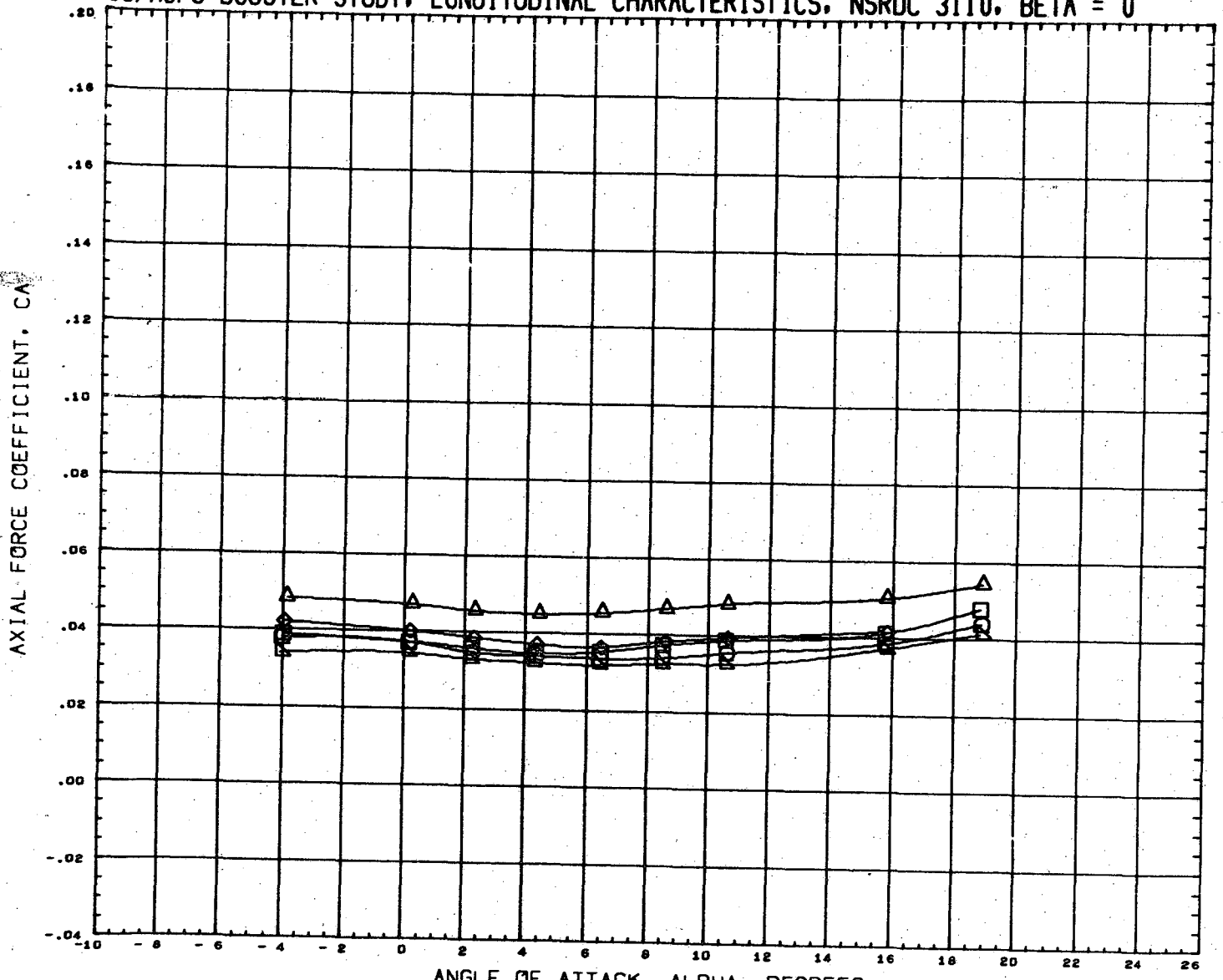
MACH 0.580

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	
20.000	3.000	1.000	
20.000	3.000	1.000	
10.000	3.000	1.000	
0.000	3.000	1.000	

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



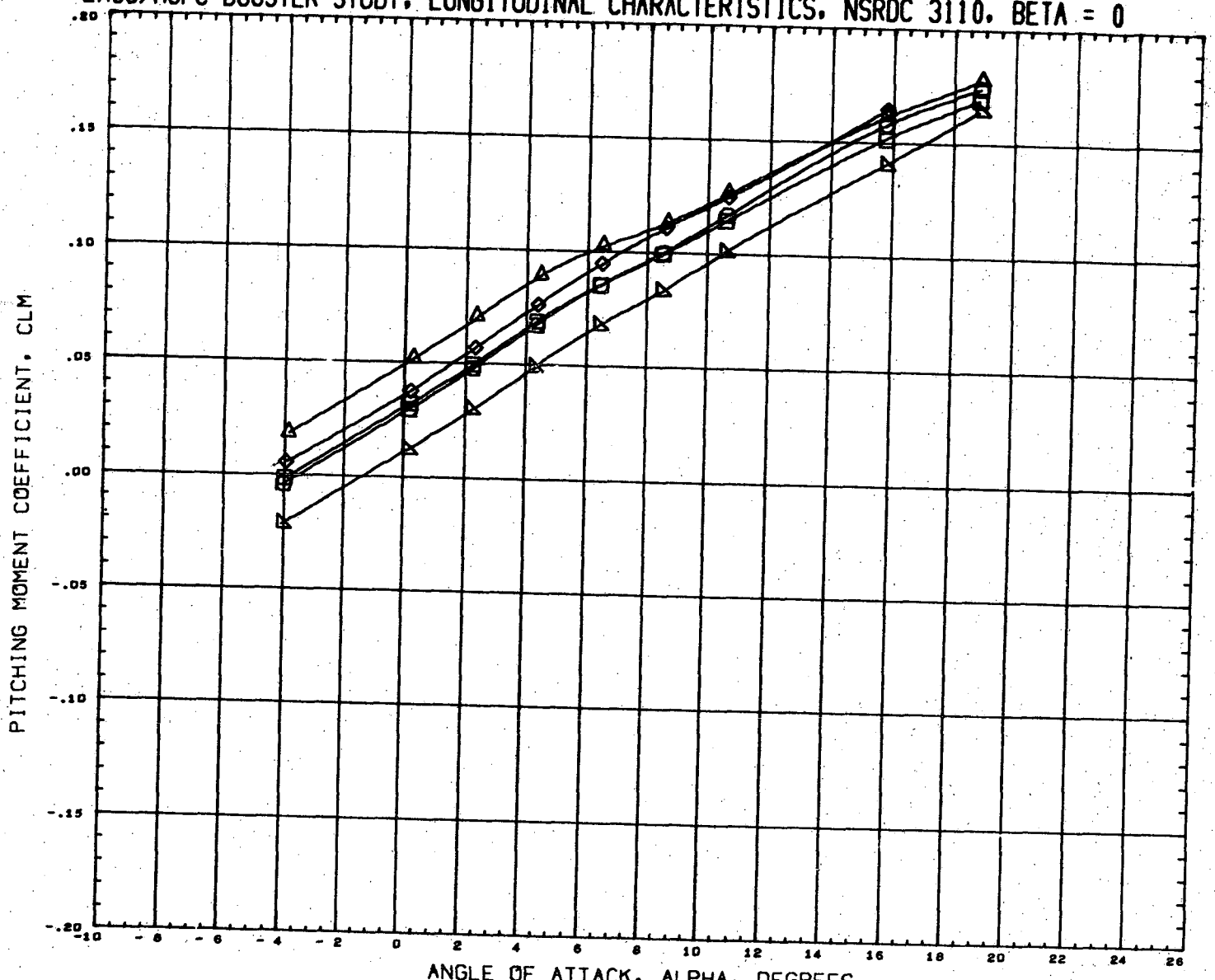
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2441)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2449)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2445)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2453)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2437)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1

MACH 0.380

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	
20.000	3.000	1.000	
20.000	3.000	1.000	
10.000	3.000	1.000	
0.000	3.000	1.000	

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



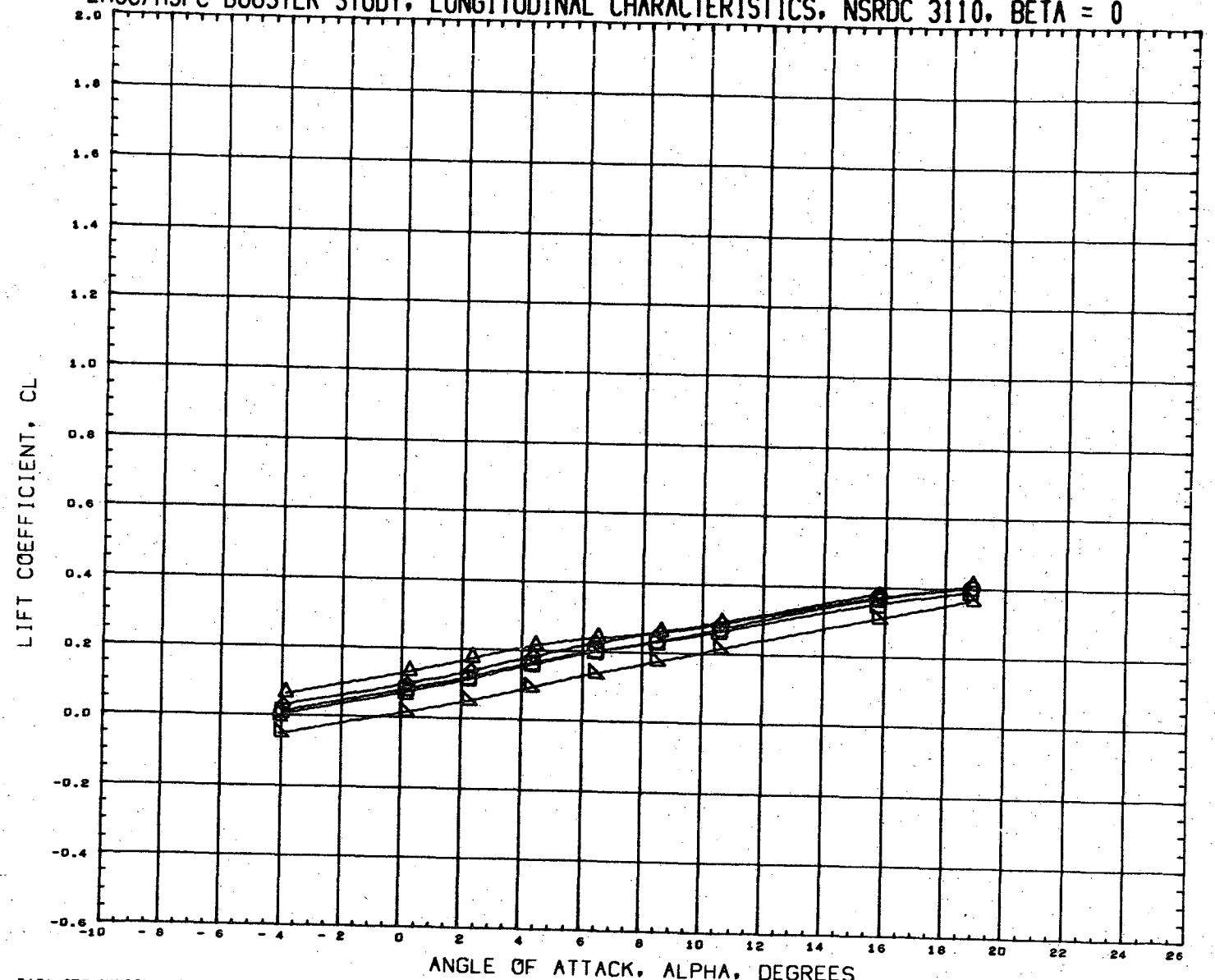
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2441)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2449)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2445)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2453)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2437)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1

MACH 0.380

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	
20.000	3.000	1.000	
20.000	3.000	1.000	
10.000	3.000	1.000	
0.000	3.000	1.000	

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



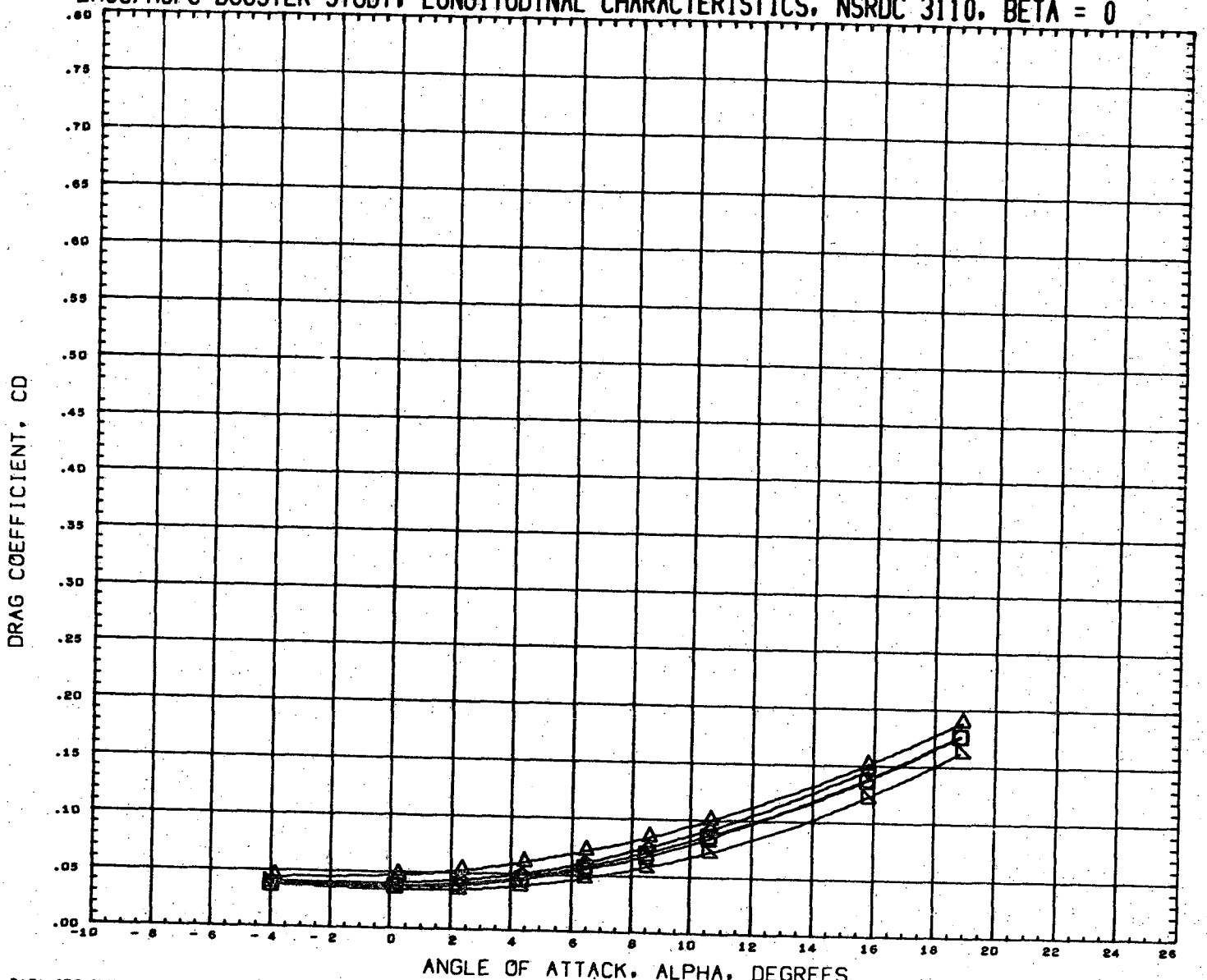
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2441)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2449)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2445)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2453)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2437)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1

MACH 0.380

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	
20.000	3.000	1.000	
20.000	3.000	1.000	
10.000	3.000	1.000	
0.000	3.000	1.000	

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



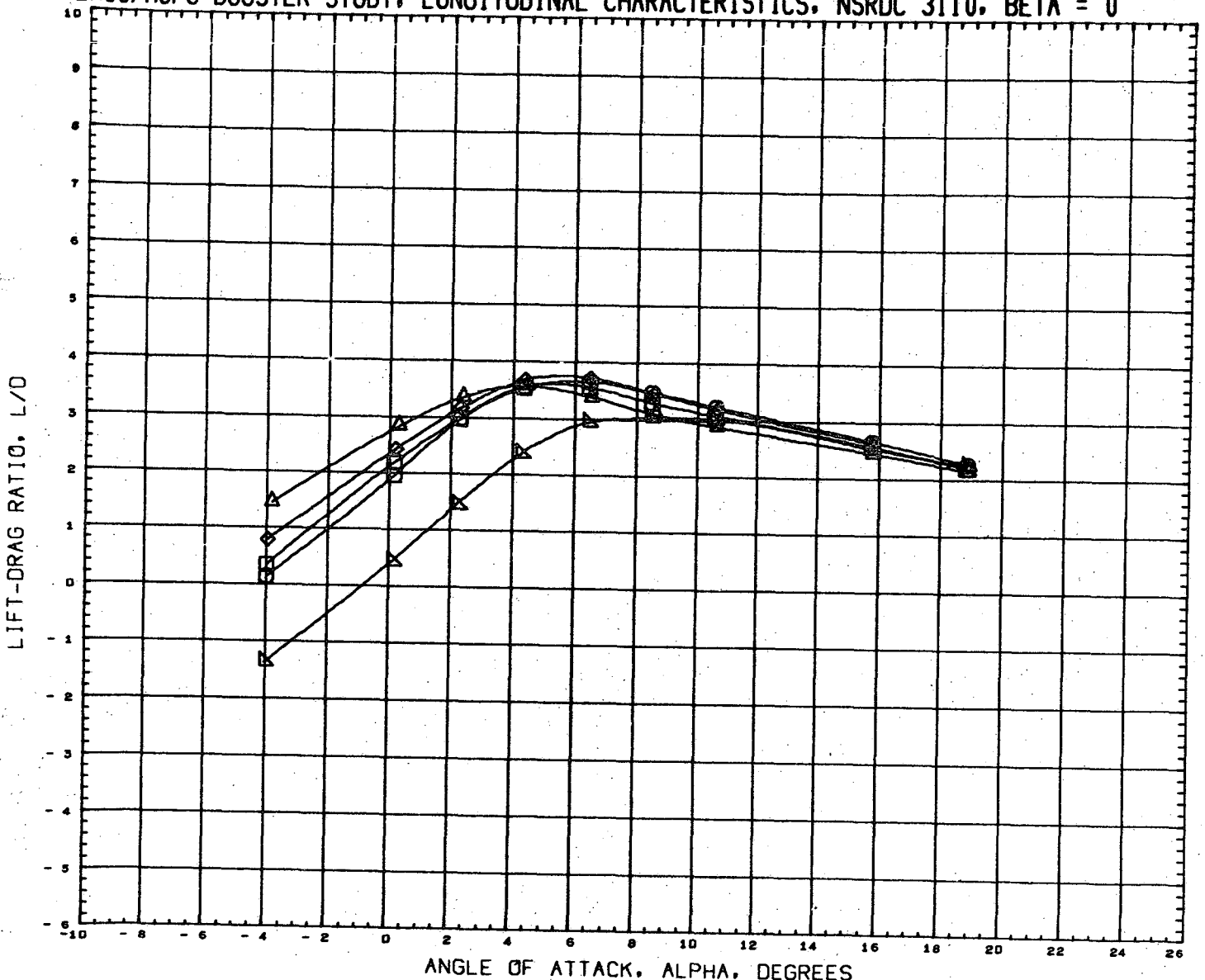
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2441)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2449)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2445)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2453)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2437)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1

MACH 0.380

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	
20.000	3.000	1.000	
20.000	3.000	1.000	
10.000	3.000	1.000	
0.000	3.000	1.000	

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2441)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2449)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2445)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2453)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2437)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1

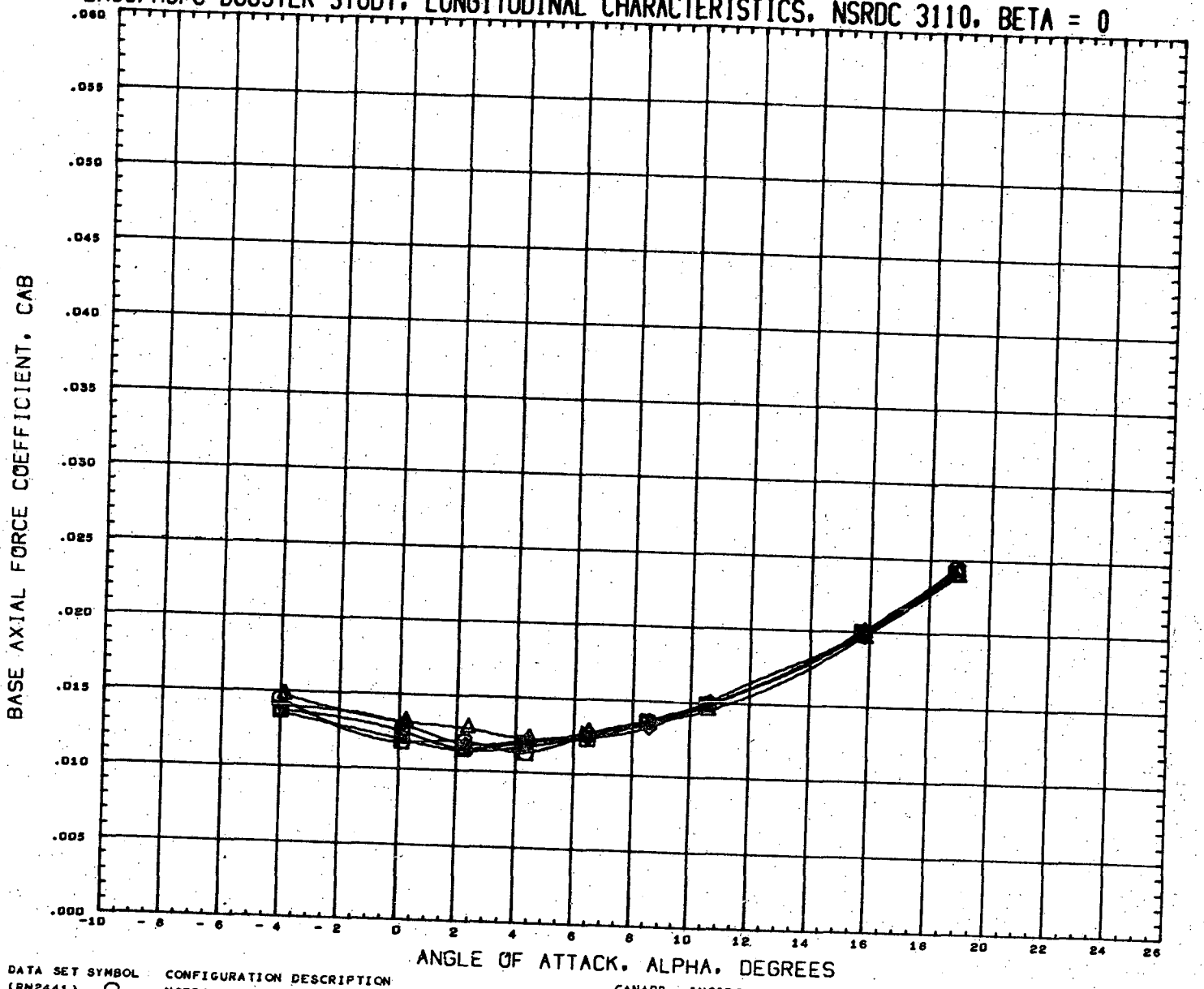
MACH 0.380

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	
20.000	3.000	1.000	
20.000	3.000	1.000	
10.000	3.000	1.000	
0.000	3.000	1.000	

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0

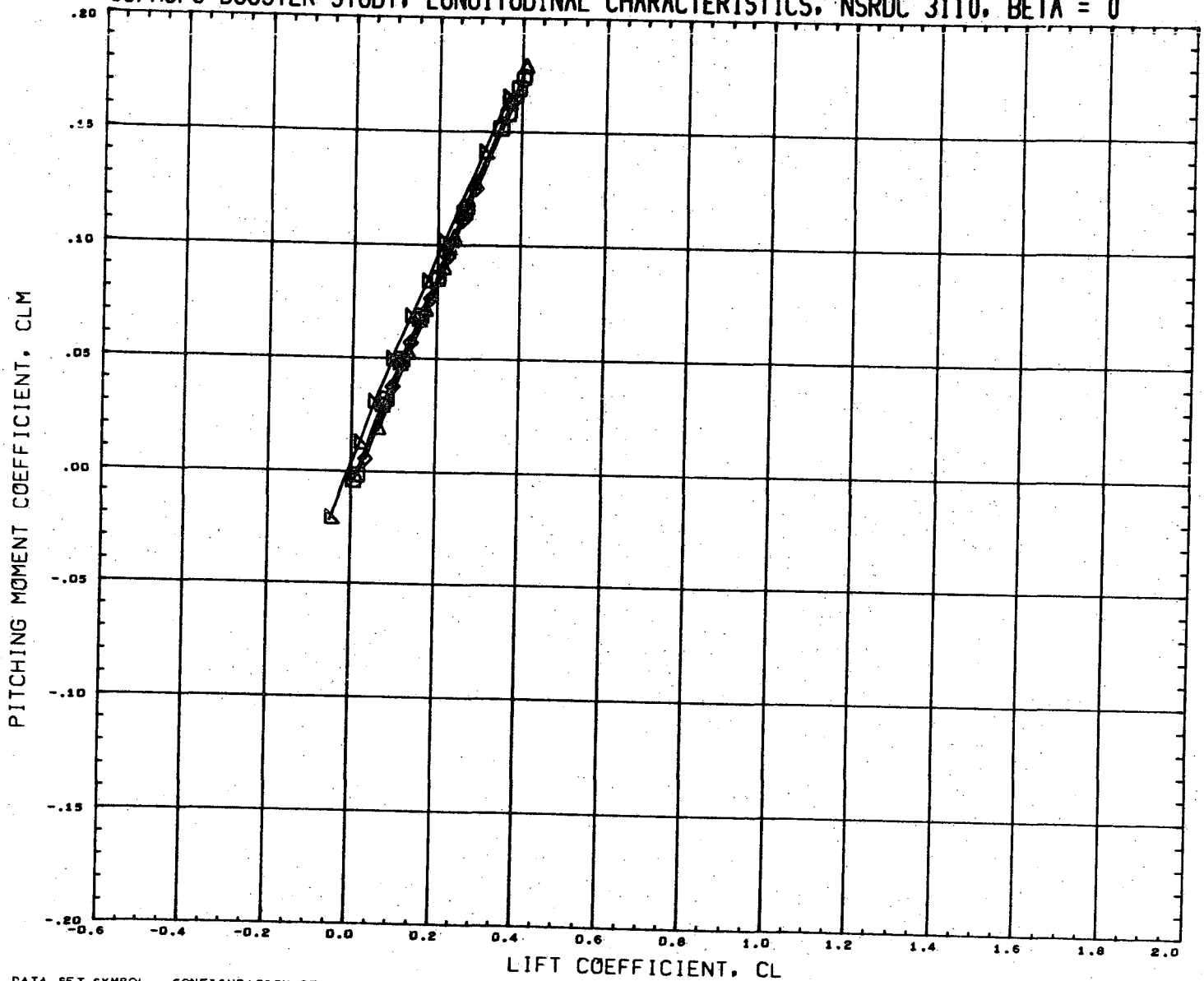


DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2441)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2449)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2445)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2453)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2437)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1

MACH 0.380

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	
20.000	3.000	1.000	
20.000	3.000	1.000	
10.000	3.000	1.000	
0.000	3.000	1.000	

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



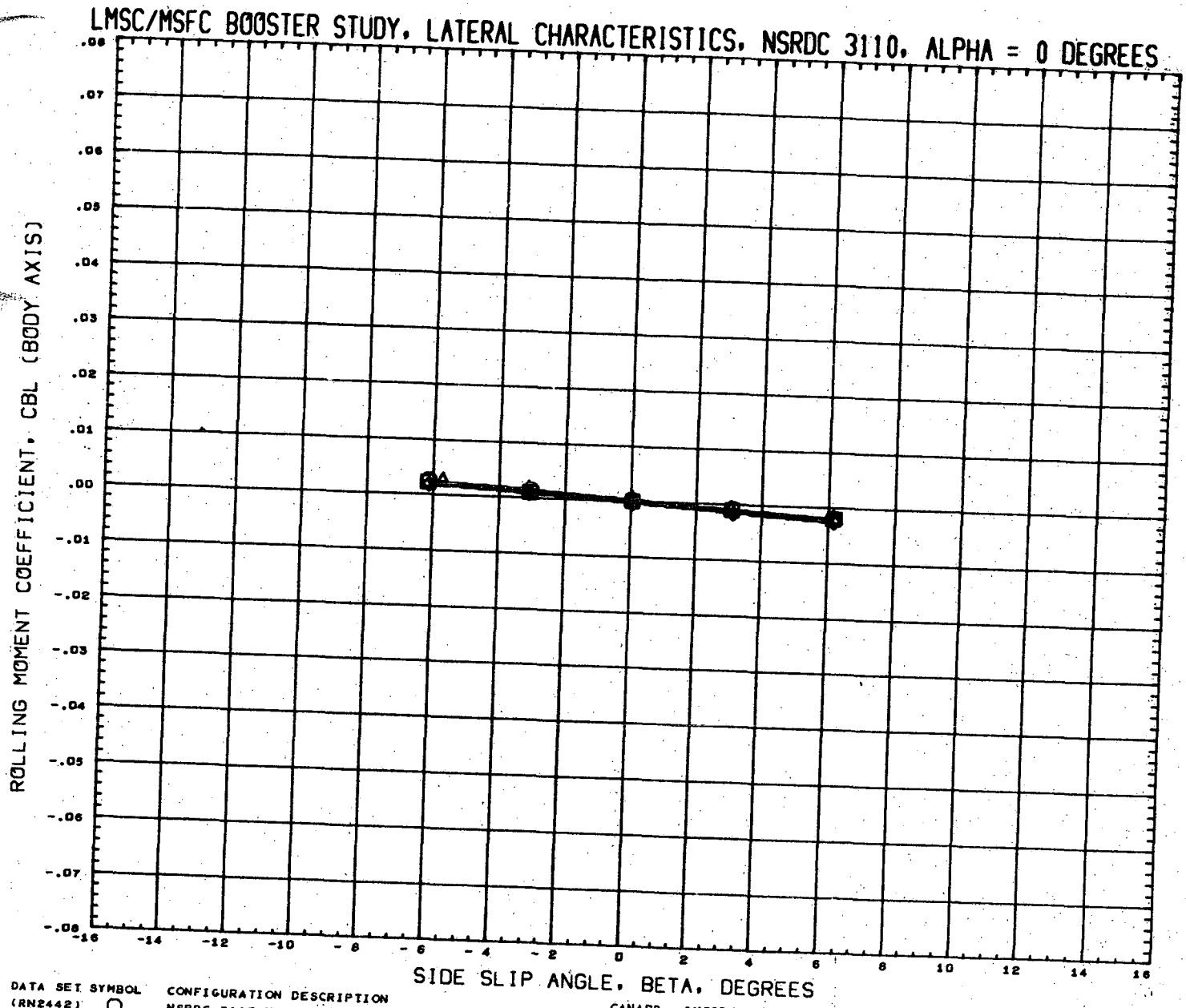
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2441)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2449)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2445)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2453)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2437)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1

MACH 0.380

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	
20.000	3.000	1.000	
20.000	3.000	1.000	
10.000	3.000	1.000	
0.000	3.000	1.000	

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

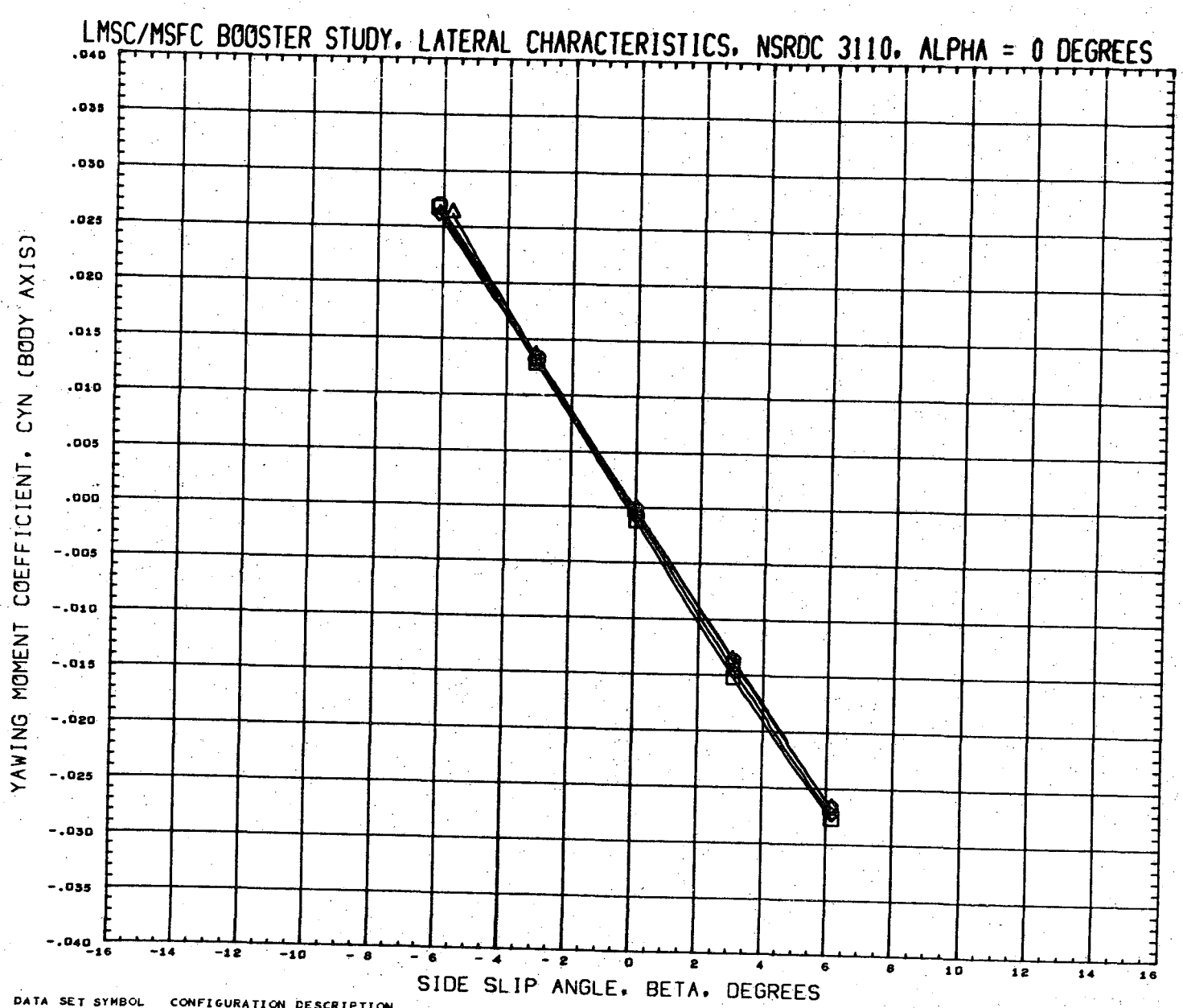


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	CANARD	INCIDC	CNDPOS	WNGPOS
(RN2442)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1	10.000	3.000	1.000	
(RN2450)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2	20.000	3.000	1.000	
(RN2454)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2	10.000	3.000	1.000	
(RN2438)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1	0.000	3.000	1.000	

MACH 0.380

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2442)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2450)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2454)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2438)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1

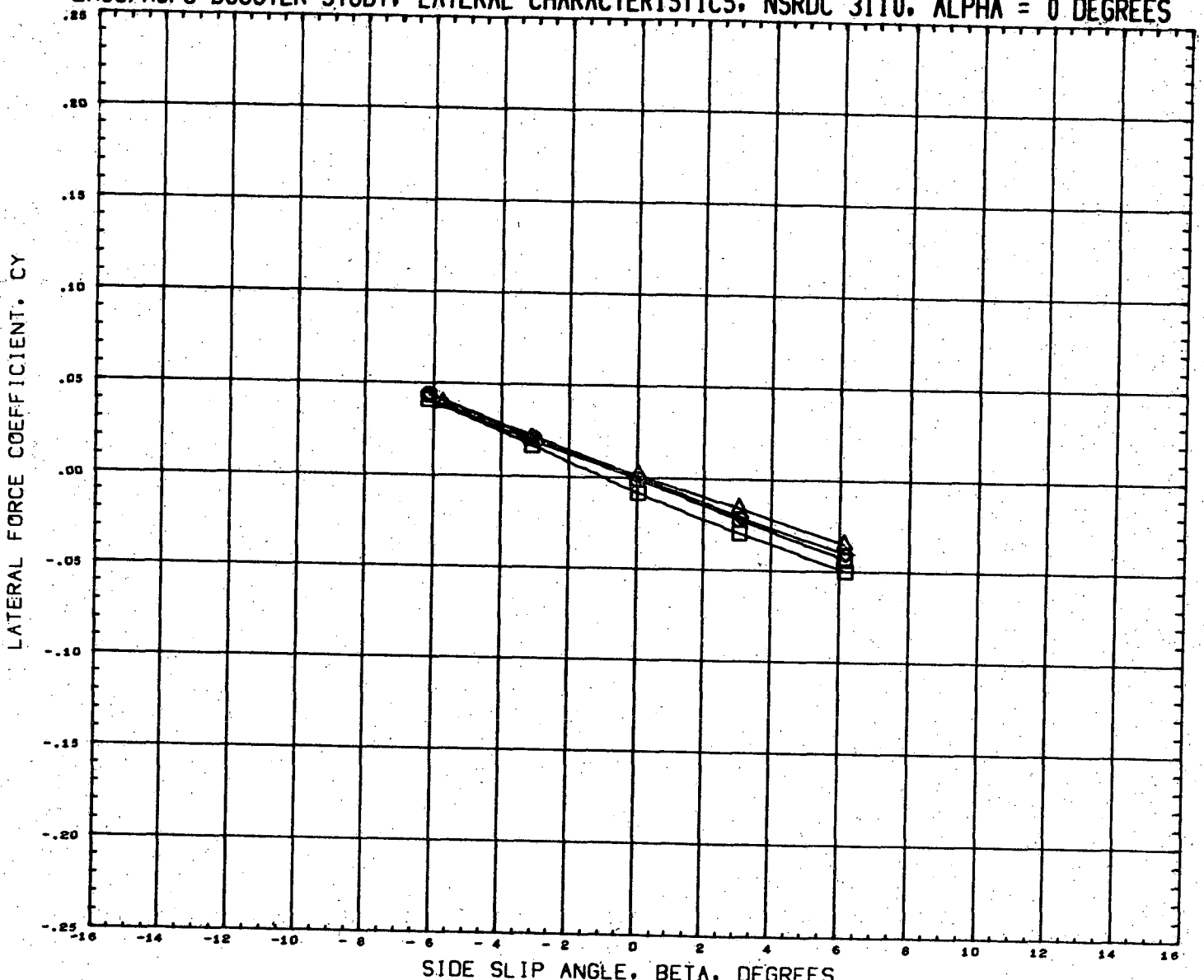
MACH 0.380

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	
20.000	3.000	1.000	
10.000	3.000	1.000	
0.000	3.000	1.000	

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



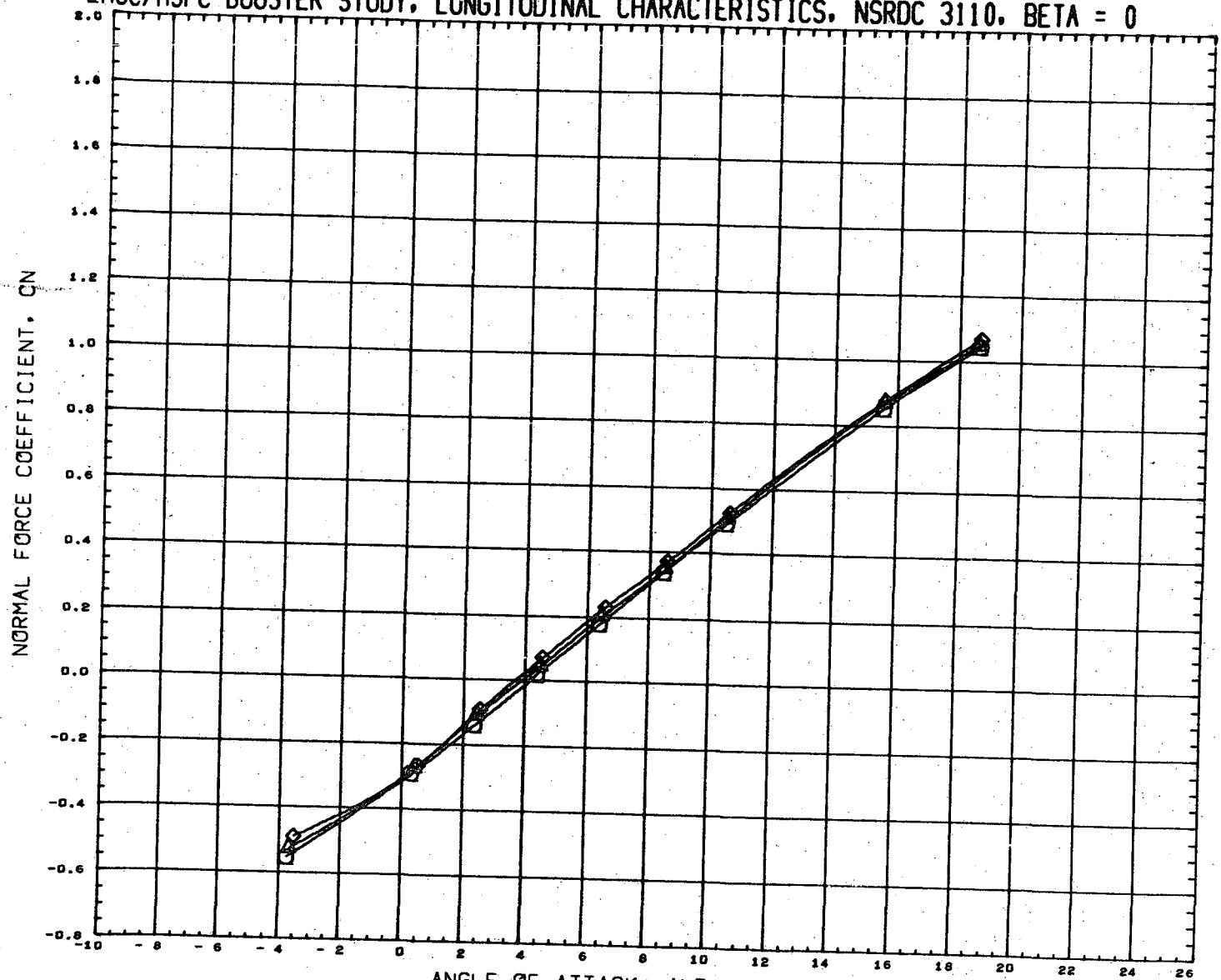
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2442)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2450)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2454)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2
(RN2438)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1

CANARD	INCIDC	CNDPOS	WNGPOS
10.000	3.000	1.000	
20.000	3.000	1.000	
10.000	3.000	1.000	
0.000	3.000	1.000	

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2329)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2333)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2337)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

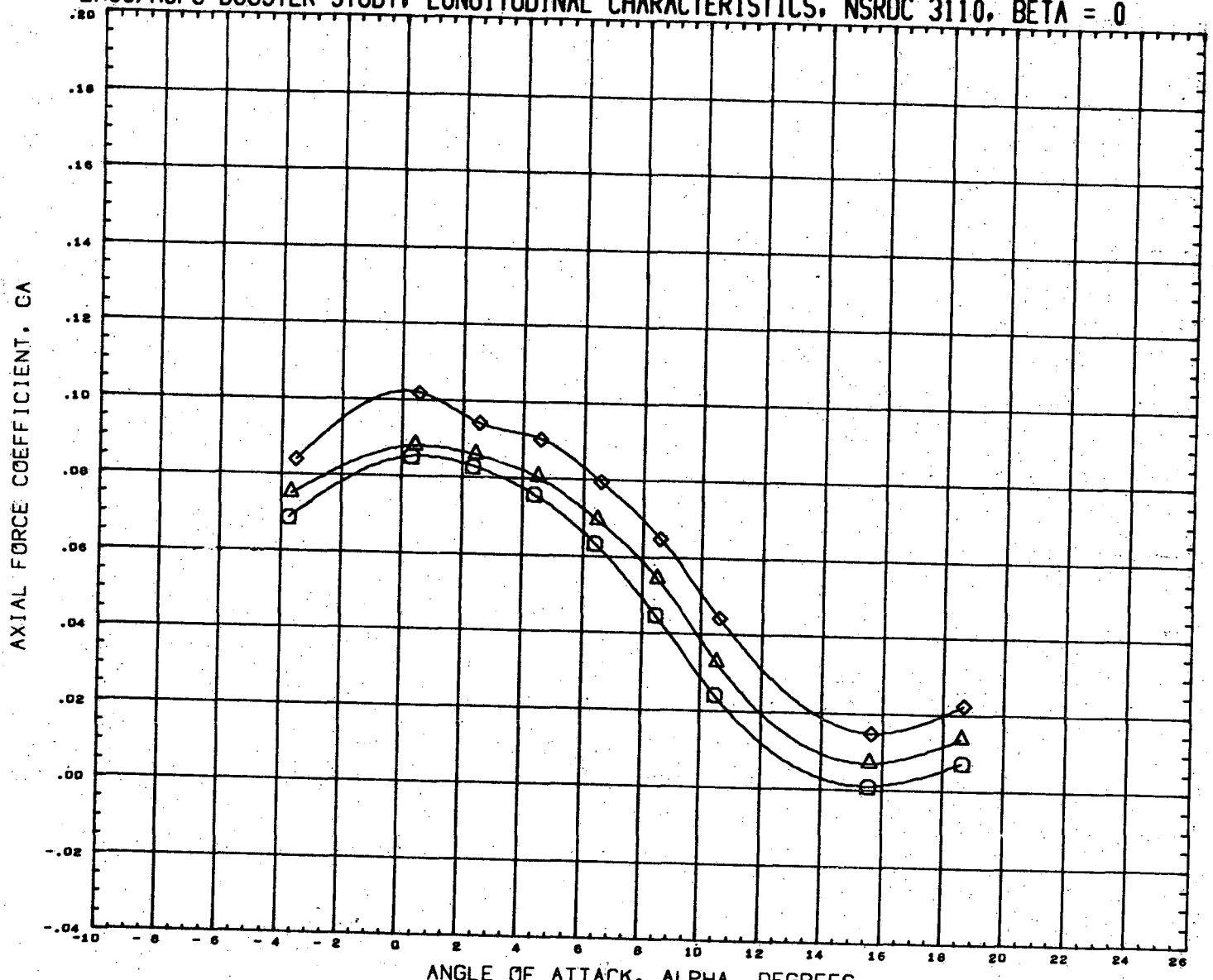
CANARD	INCIDC	CNDPOS	WNGPOS
0.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



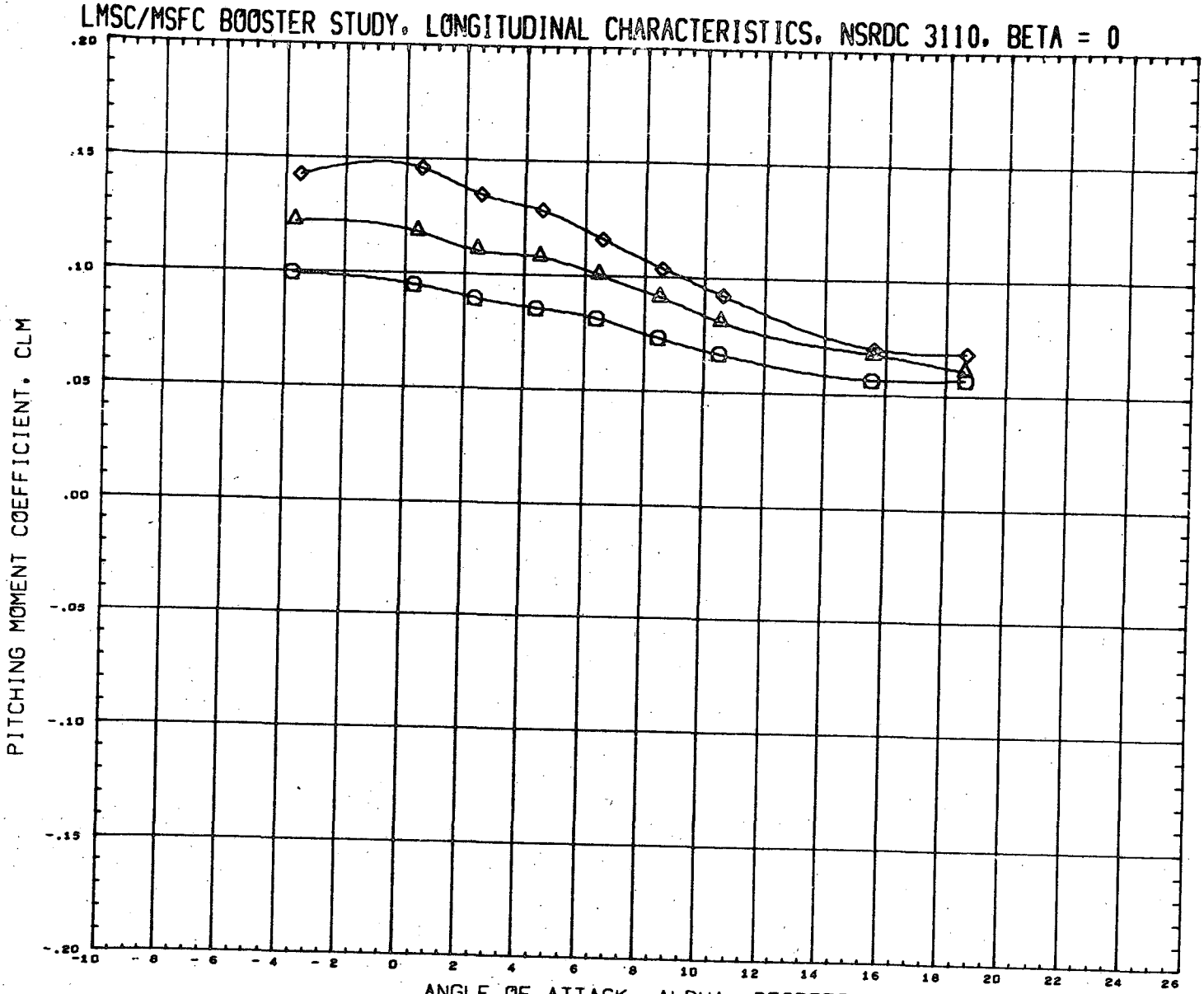
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2329)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2333)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2337)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

CANARD	INCIDC	CNDPOS	WNGPOS
0.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

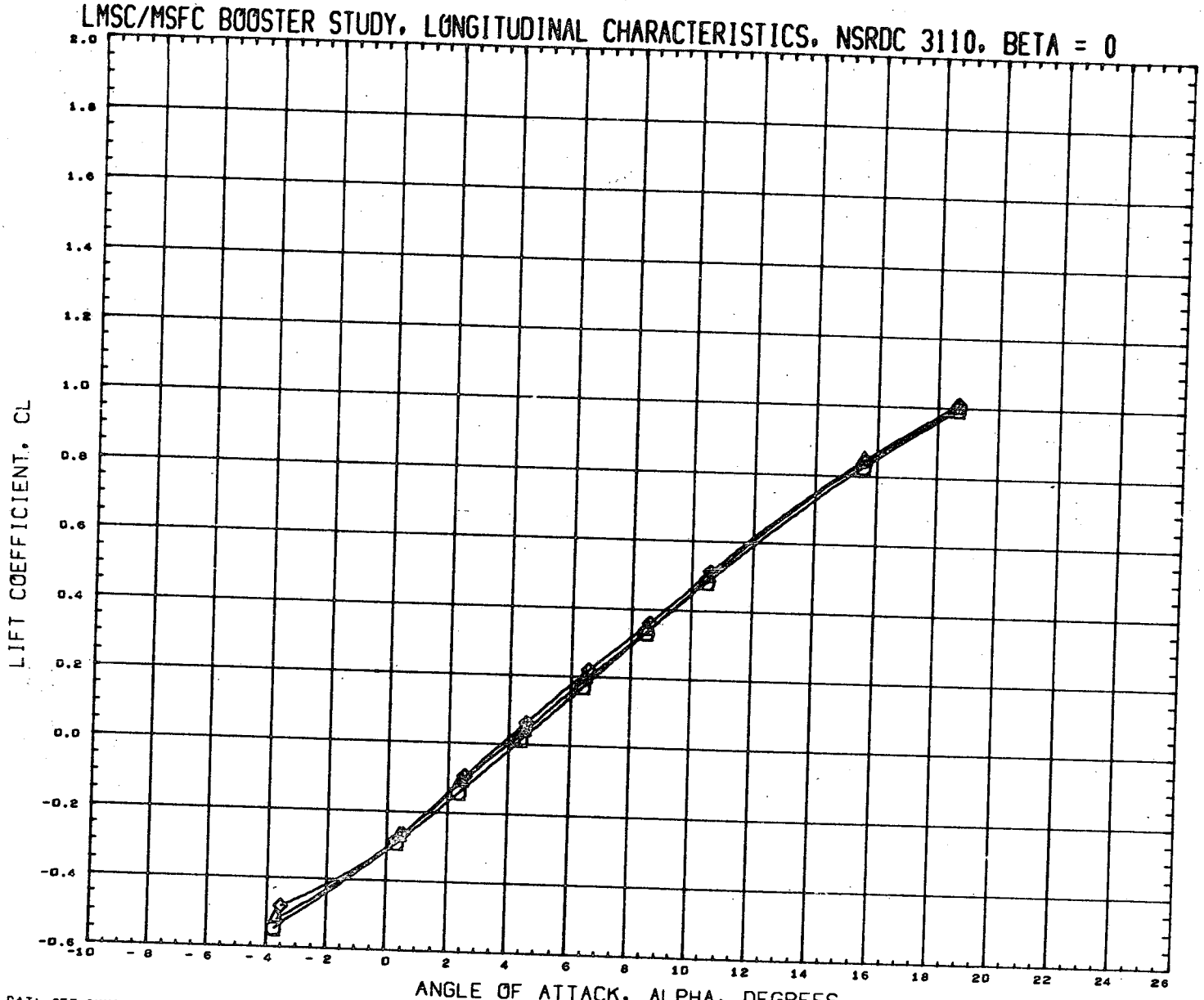
MACH 0.381



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CANARD	INCIDC	CNDPOS	WNGPOS
(RN2329) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	0.000	3.000	1.000	1.000
(RN2333) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	10.000	3.000	1.000	1.000
(RN2337) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	20.000	3.000	1.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2329)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2333)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2337)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

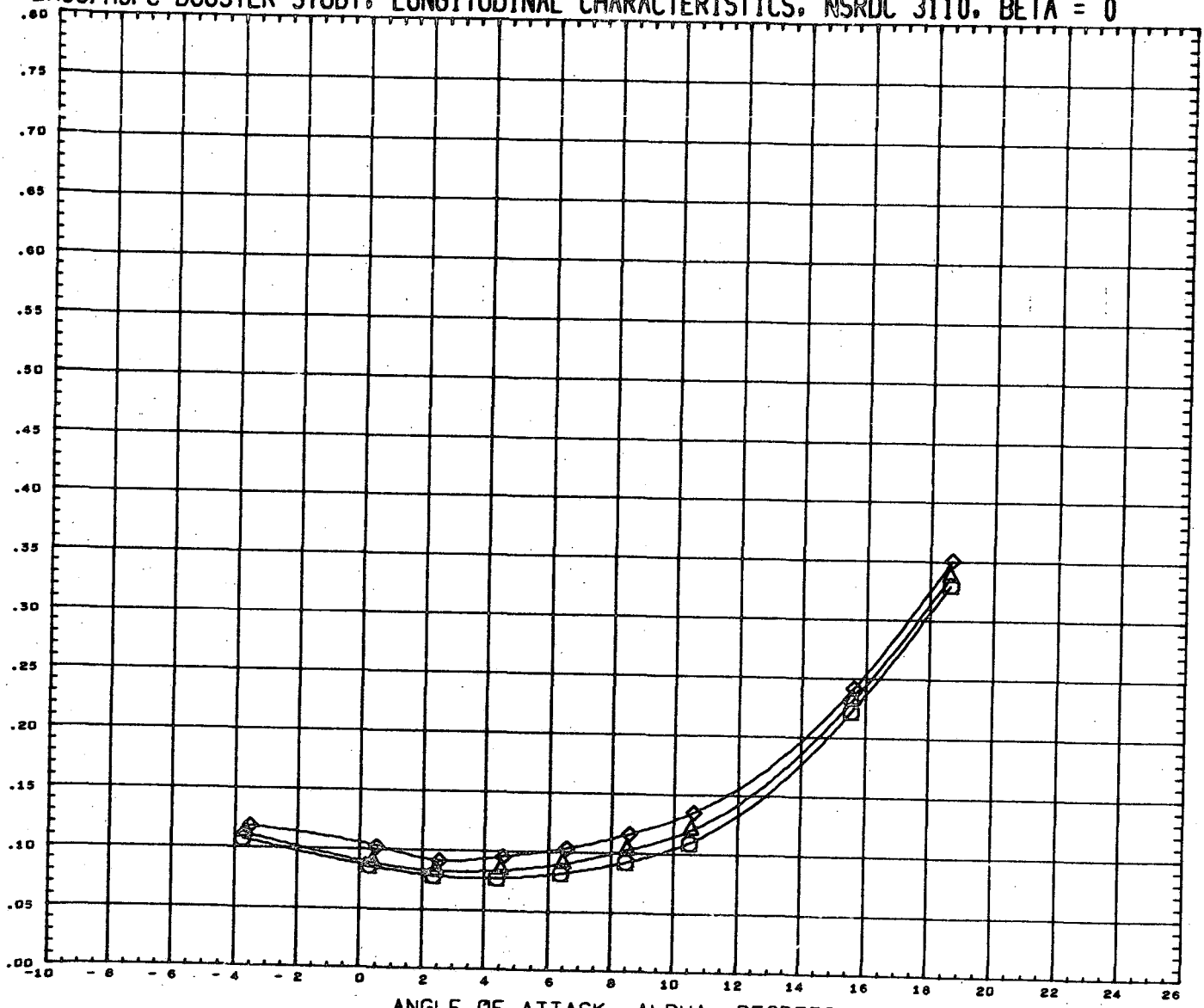
CANARD	INCIDC	CNDPOS	WNGPOS
0.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2329)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2333)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2337)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

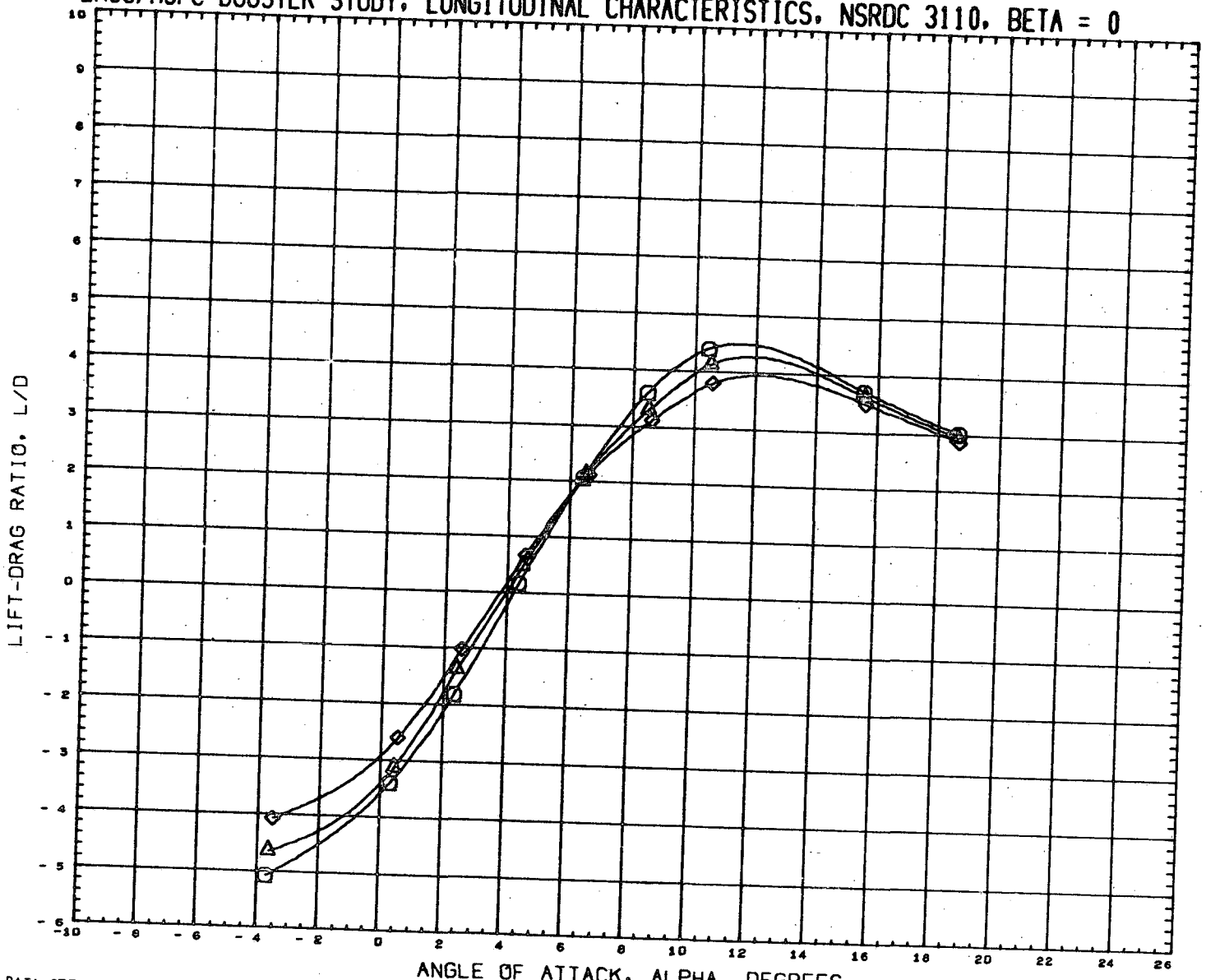
CANARD	INCIDC	CNDPOS	WNGPOS
0.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.361

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2329)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2333)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2337)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

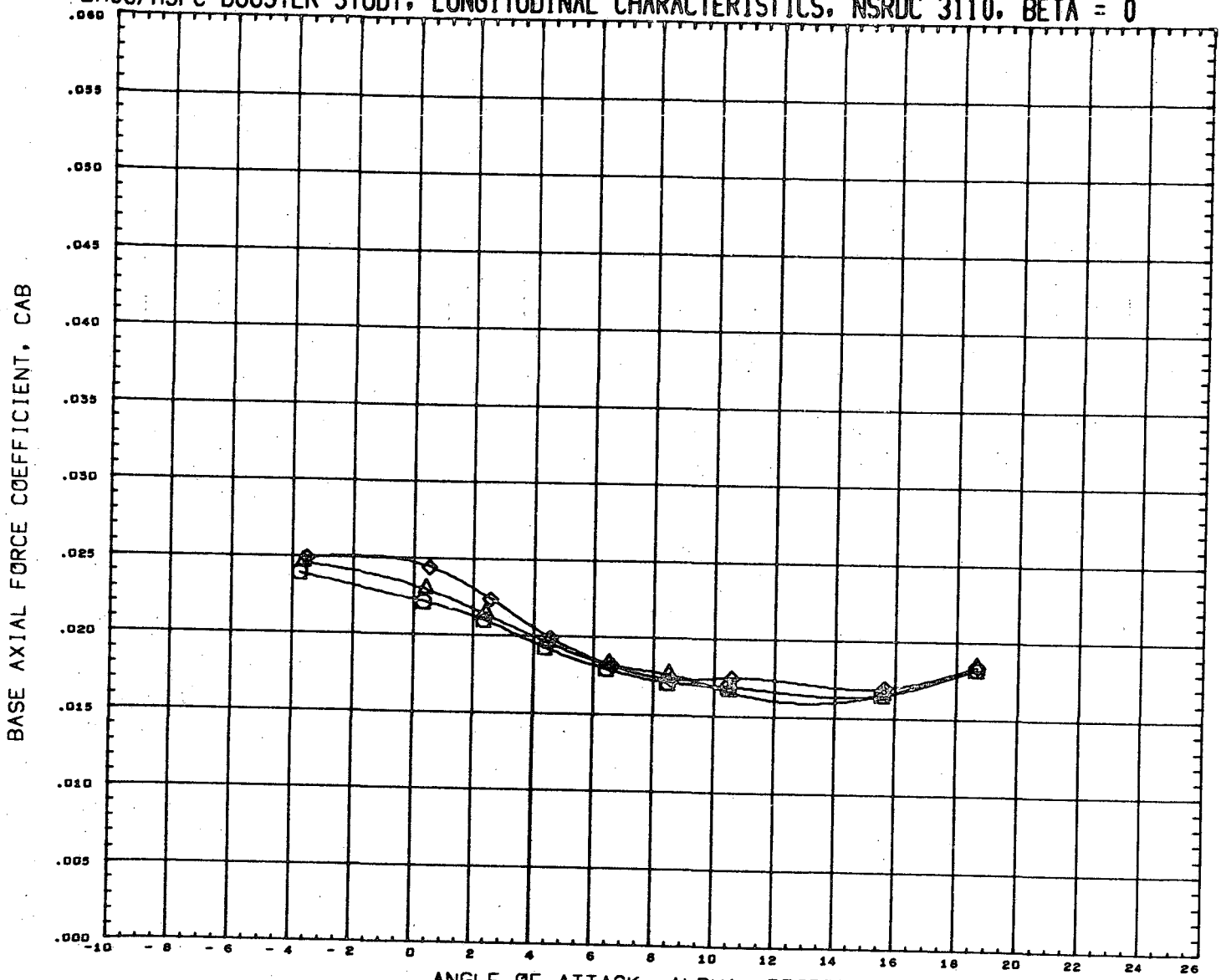
CANARD	INCIDC	CNDPOS	WNGPOS
0.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



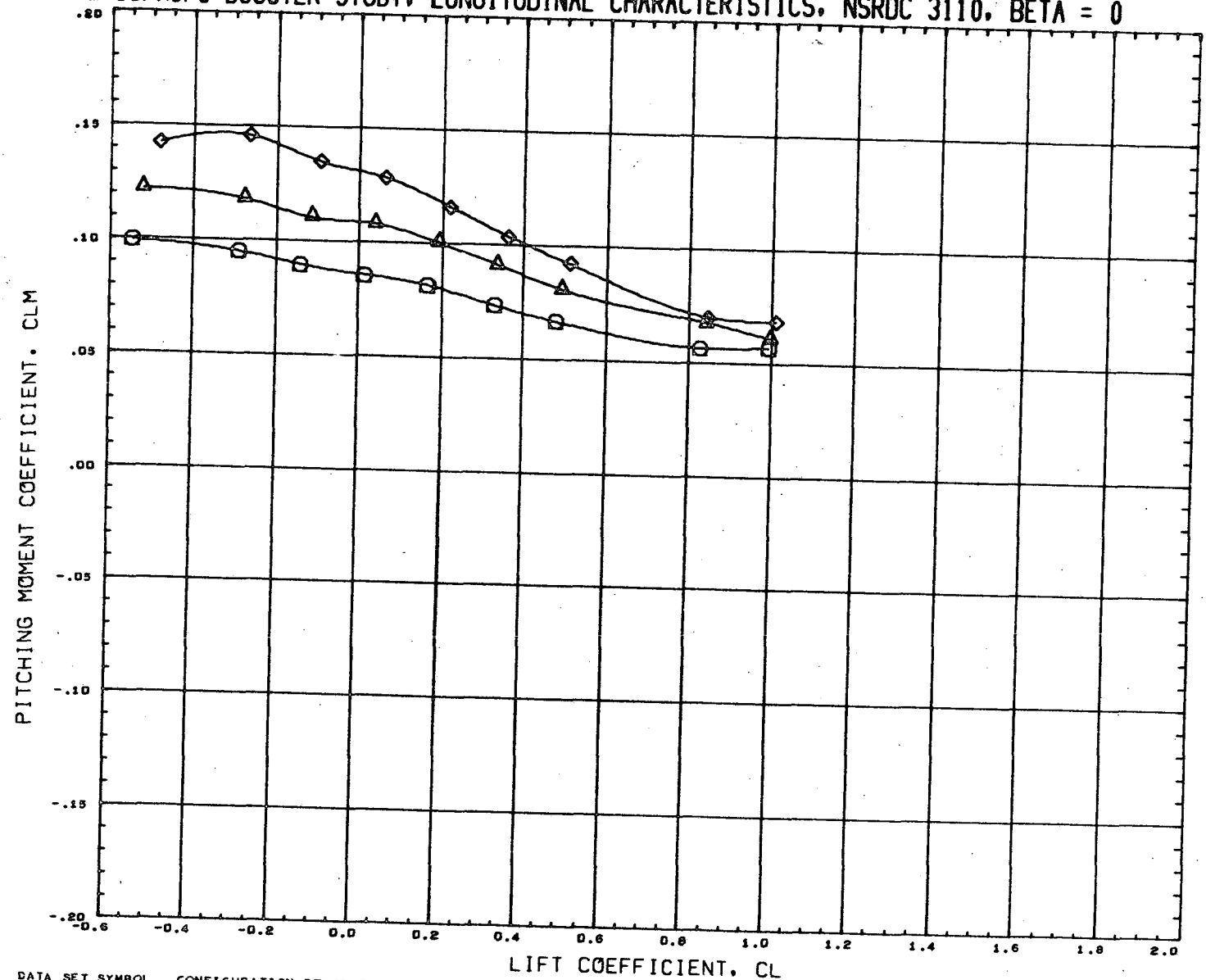
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2329)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2333)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2337)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.381

CANARD	INCIDC	CNDPOS	WNGPOS
0.000	3.000	1.000	1.000
10.000	3.000	1.000	1.000
20.000	3.000	1.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2329)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2333)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2337)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

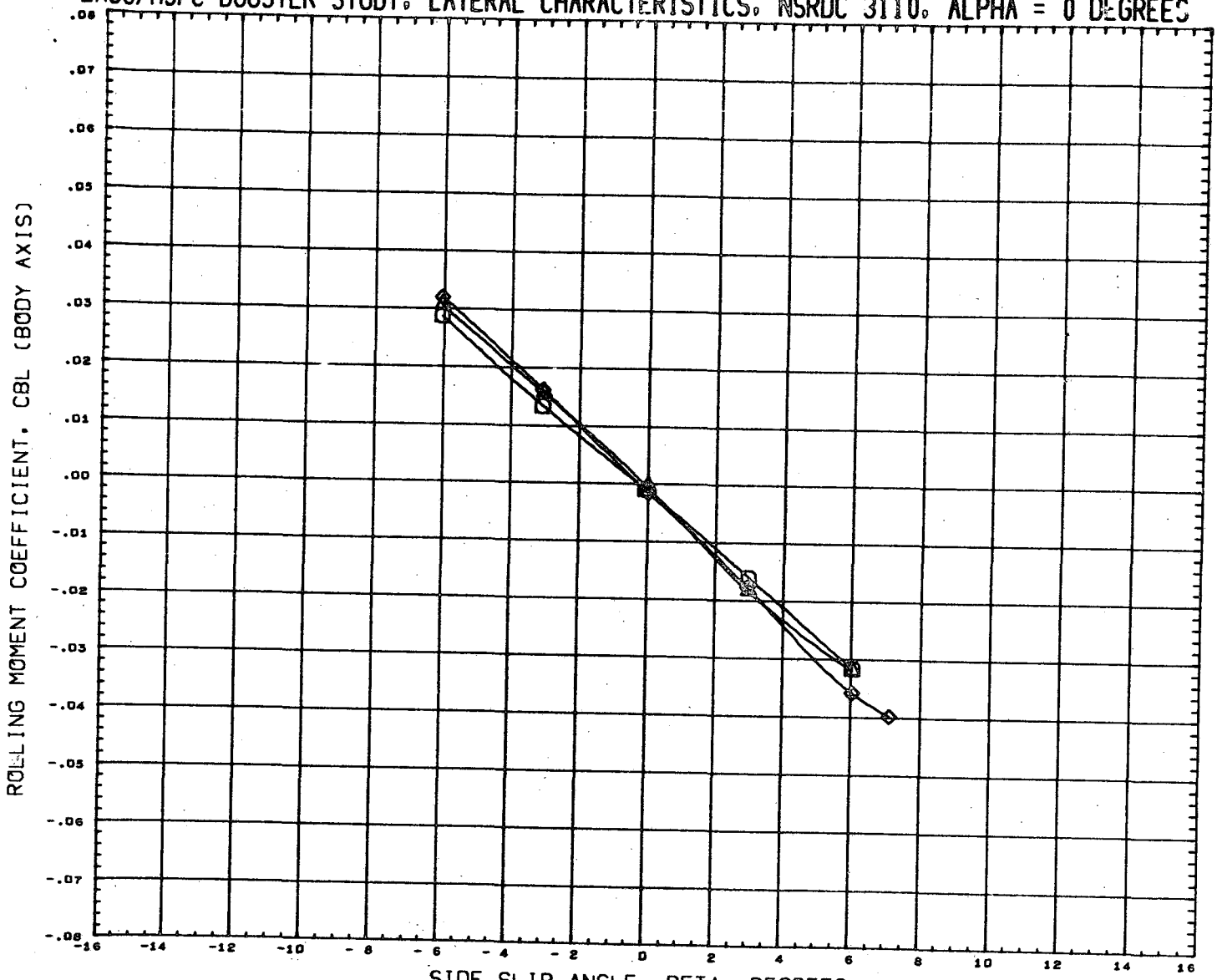
ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	0.000	3.000	1.000
-20.000	10.000	3.000	1.000
-20.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES

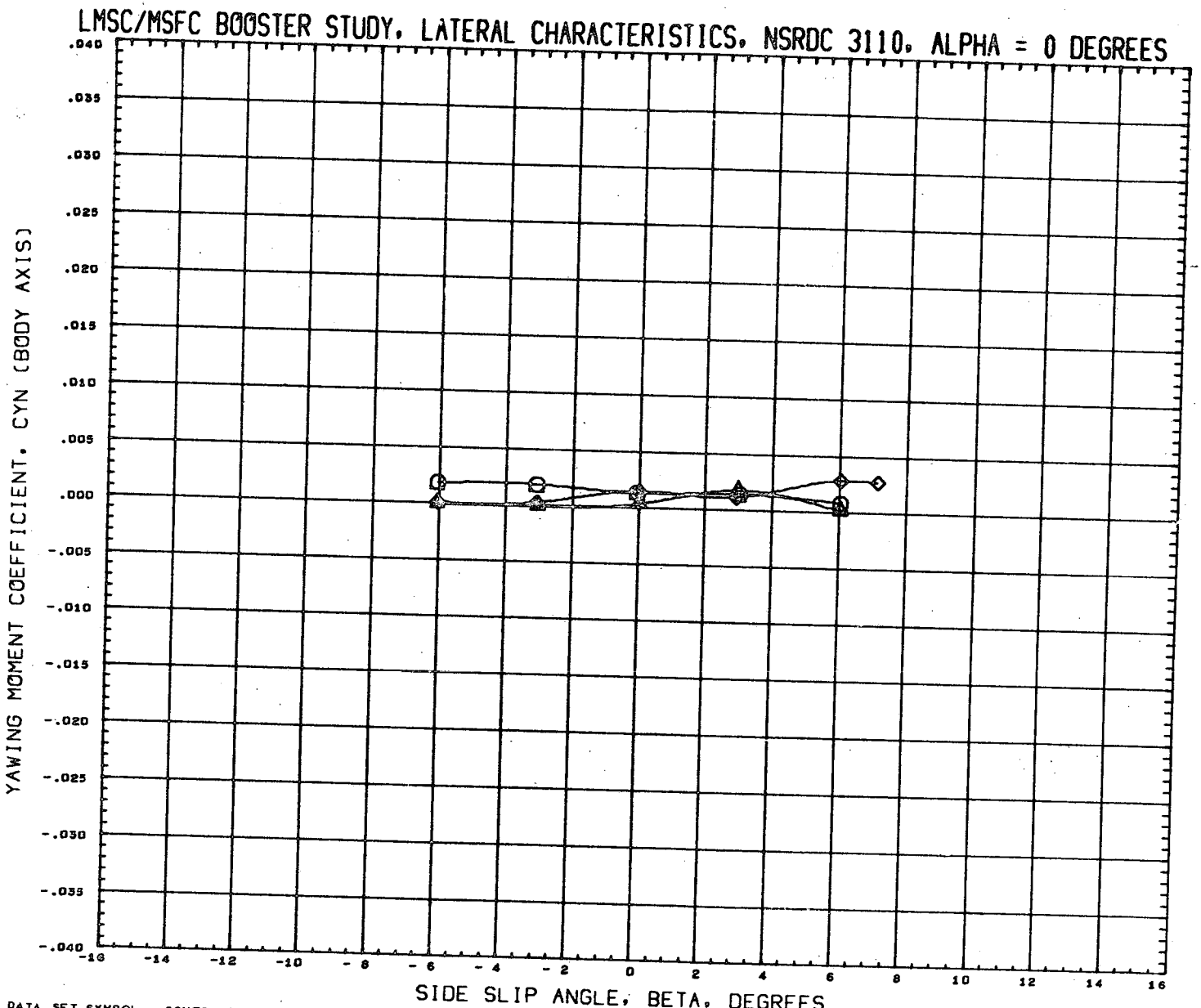


DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2330) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2334) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2336) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	0.000	3.000	1.000
-20.000	10.000	3.000	1.000
-20.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

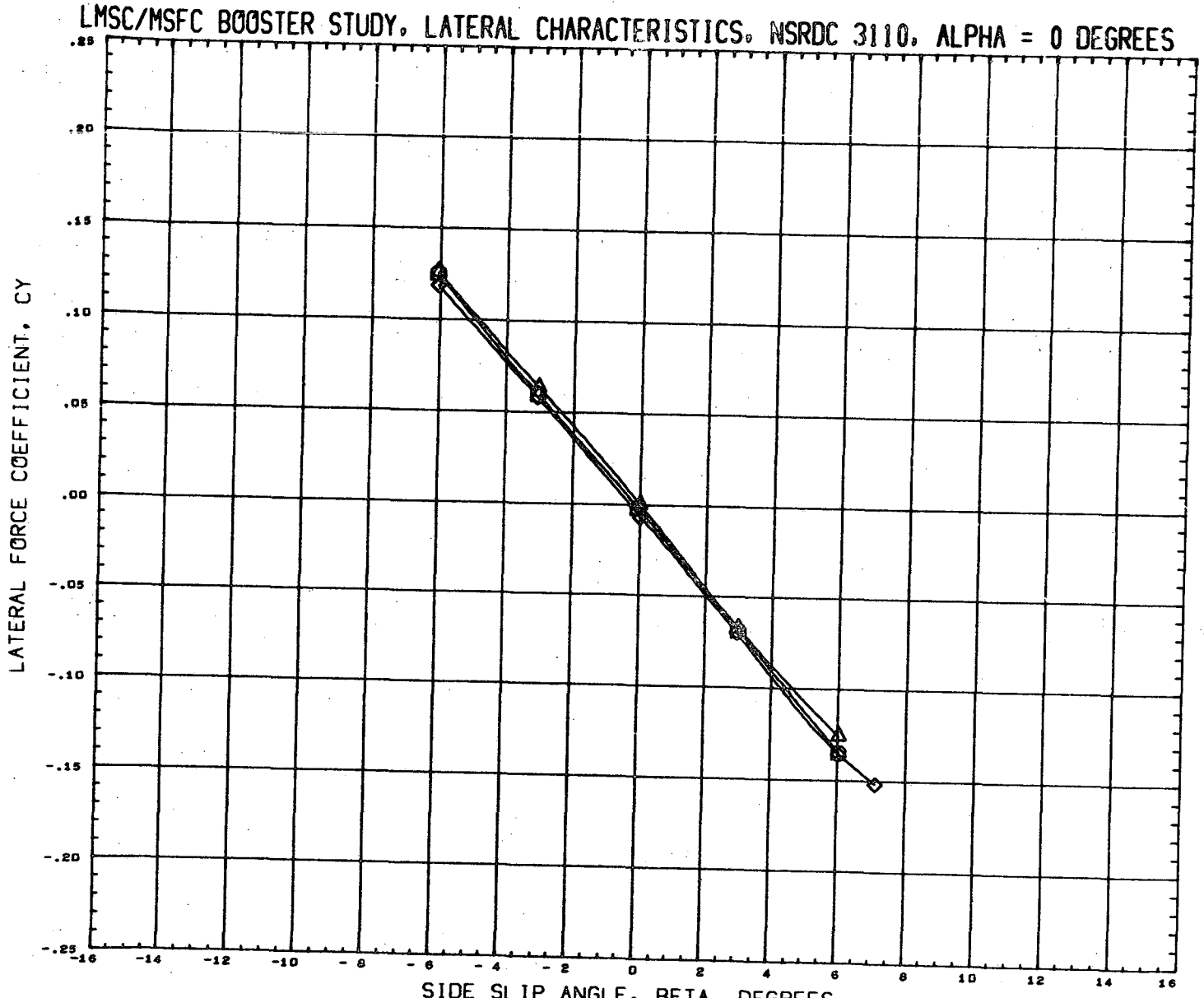


DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2330) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2334) ☒	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2338) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	0.000	3.000	1.000
-20.000	10.000	3.000	1.000
-20.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2330)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2334)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2338)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

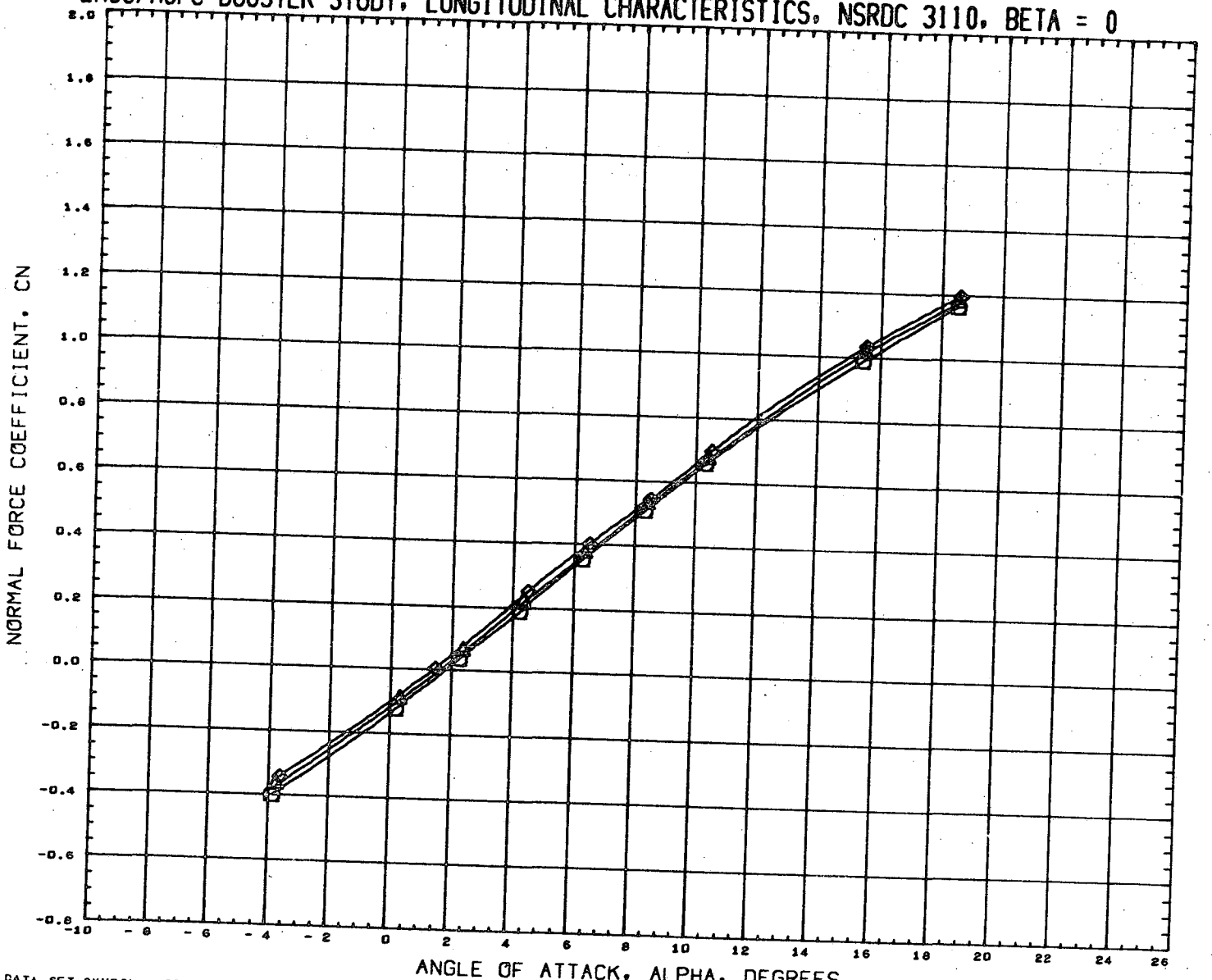
ELEVTR	CANARD	INCIDC	CNDPOS
-20.000	0.000	3.000	1.000
-20.000	10.000	3.000	1.000
-20.000	20.000	3.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2341)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2345)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

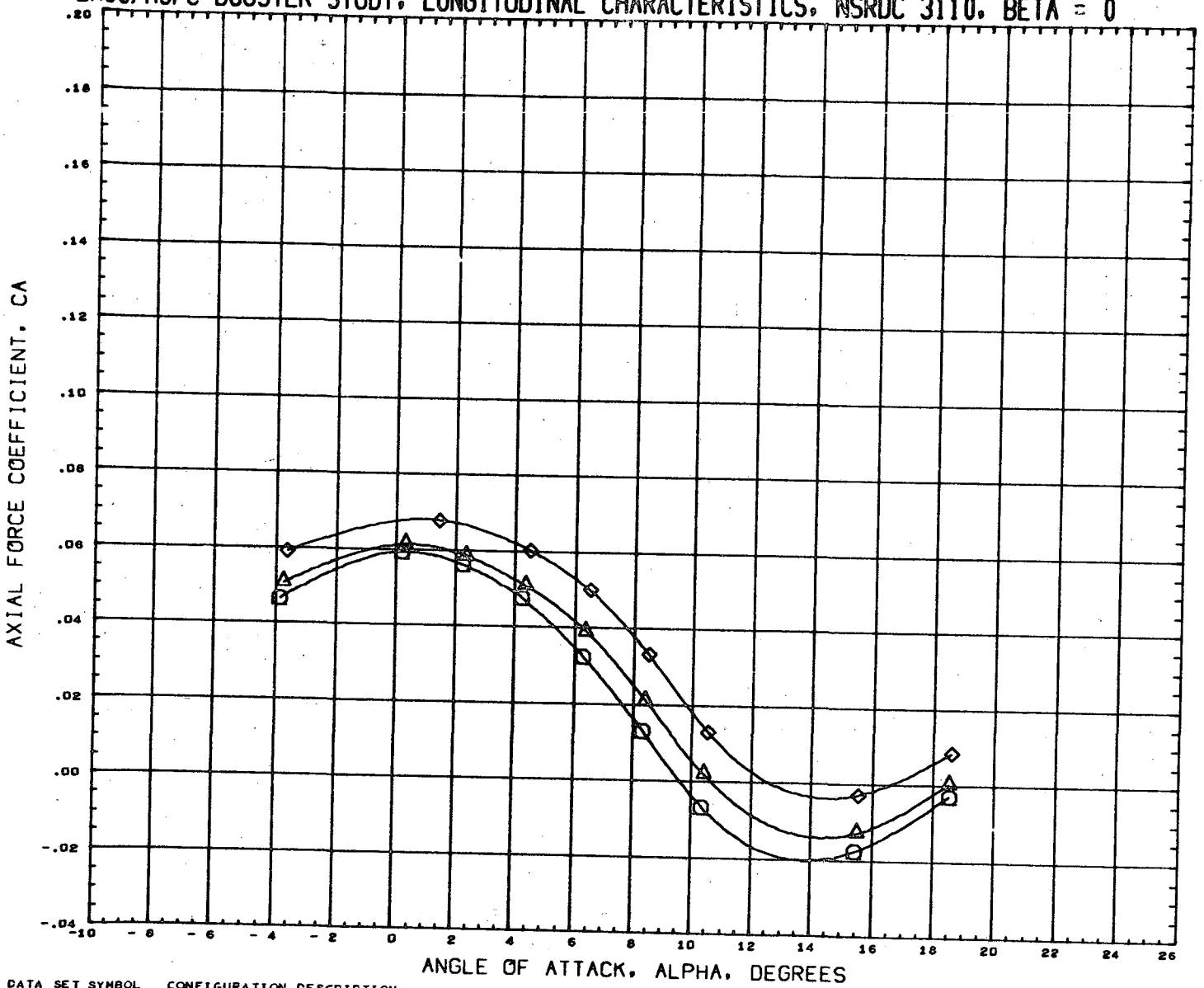
MACH 0.380

ELEVTR	CANARD	INCIDC	CNDPOS
-10.000	0.000	3.000	1.000
-10.000	10.000	3.000	1.000
-10.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



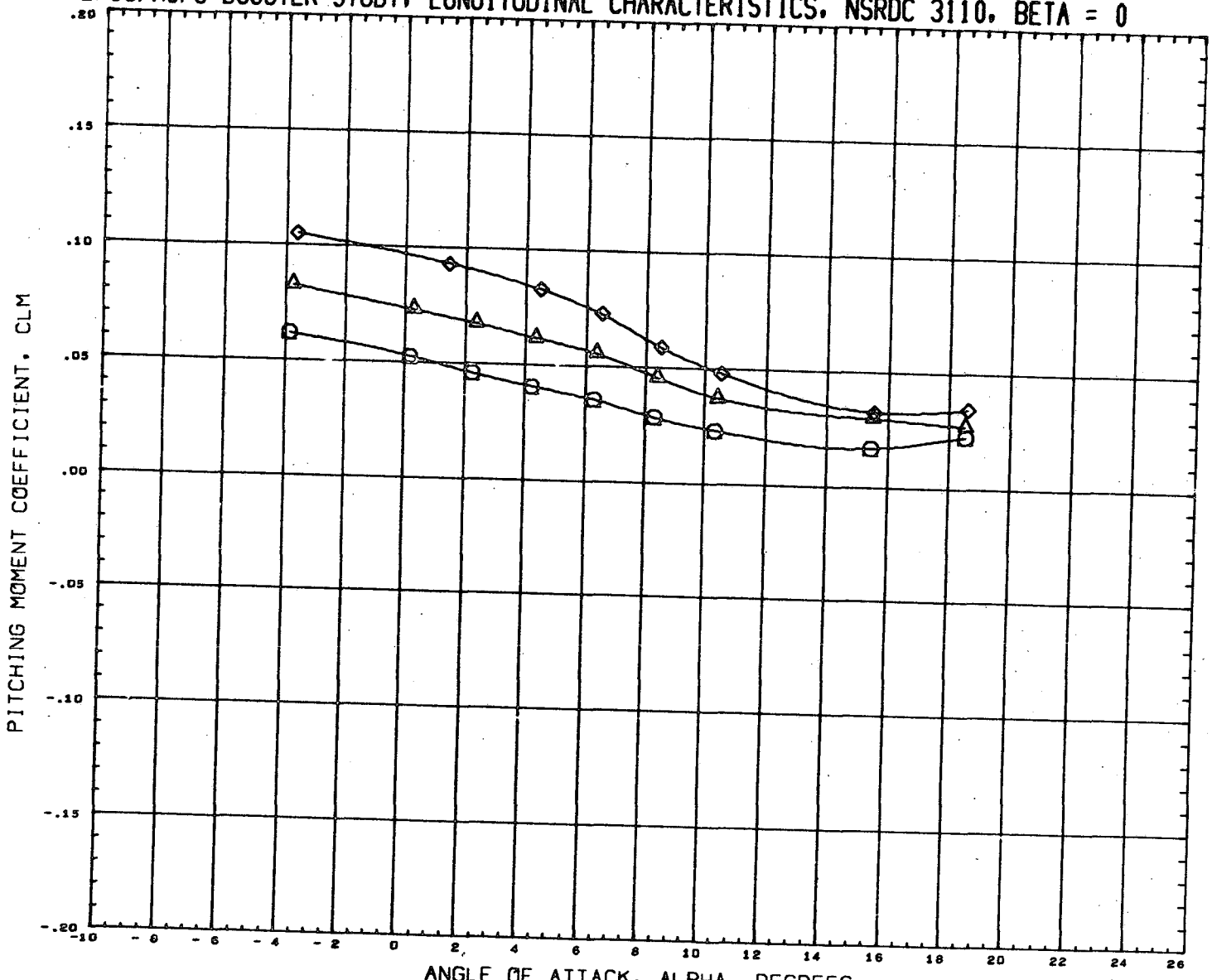
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2341)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2345)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
-10.000	0.000	3.000	1.000
-10.000	10.000	3.000	1.000
-10.000	20.000	3.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVTR	CANARD	INCIDC	CNDPOS
(RN2341) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	-10.000	0.000	3.000	1.000
(RN2345) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	-10.000	10.000	3.000	1.000
(RN2349) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	-10.000	20.000	3.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

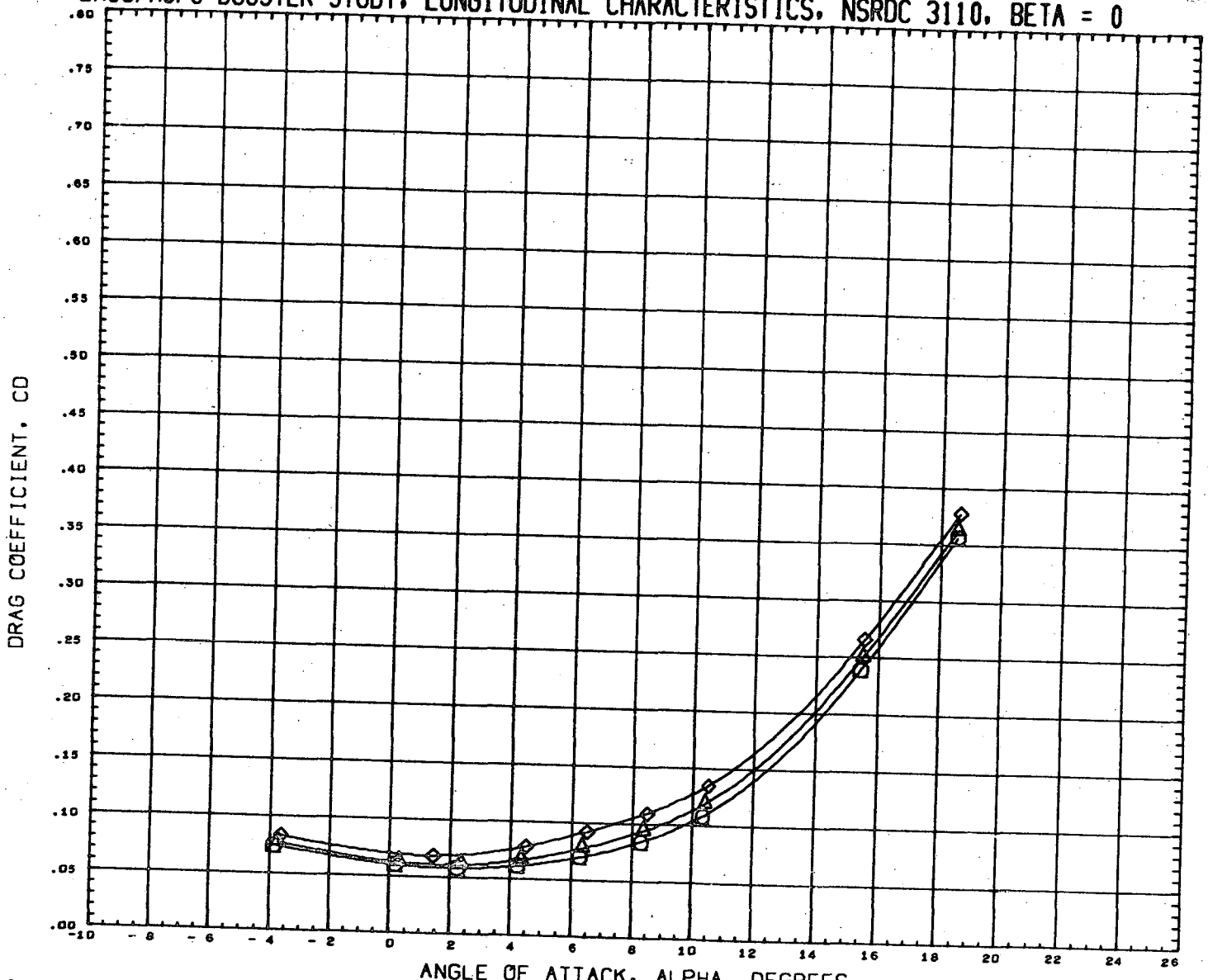
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2341)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2345)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
-10.000	0.000	3.000	1.000
-10.000	10.000	3.000	1.000
-10.000	20.000	3.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

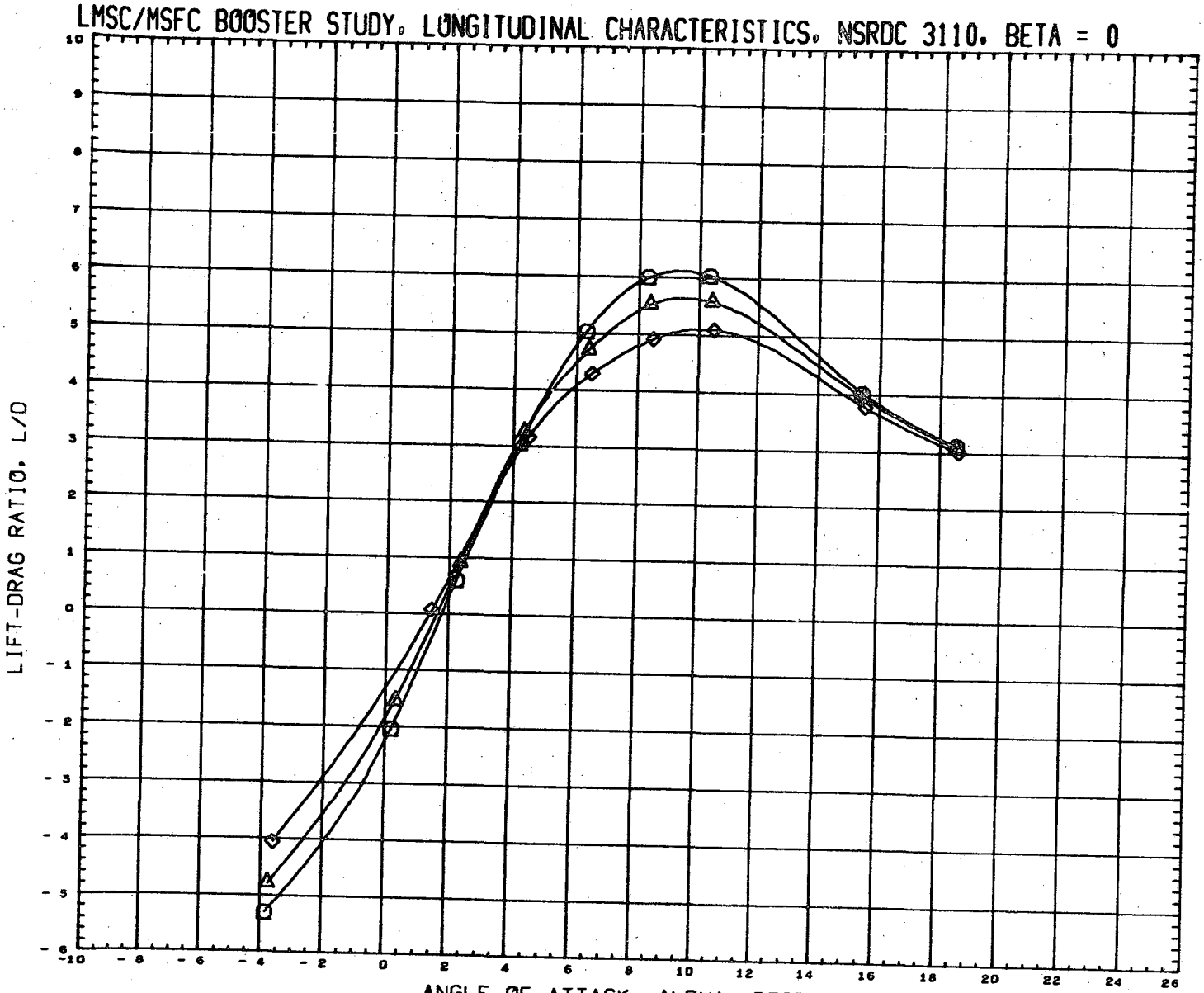


DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2341) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2345) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
-10.000	0.000	3.000	1.000
-10.000	10.000	3.000	1.000
-10.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.380


LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0
LIFT-DRAG RATIO. L/D
ANGLE OF ATTACK. ALPHA. DEGREES

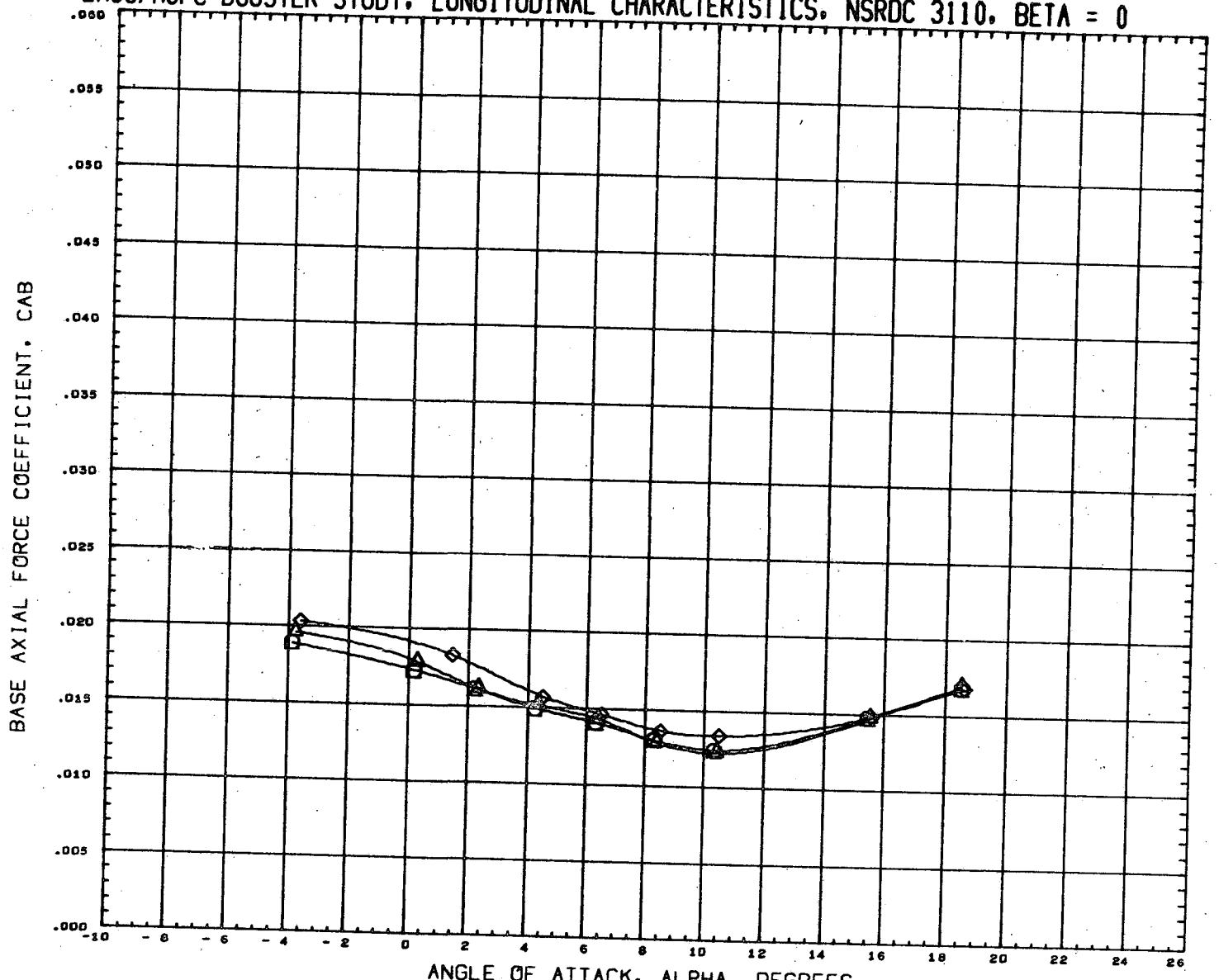
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2341) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2345) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
-10.000	0.000	3.000	1.000
-10.000	10.000	3.000	1.000
-10.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.380

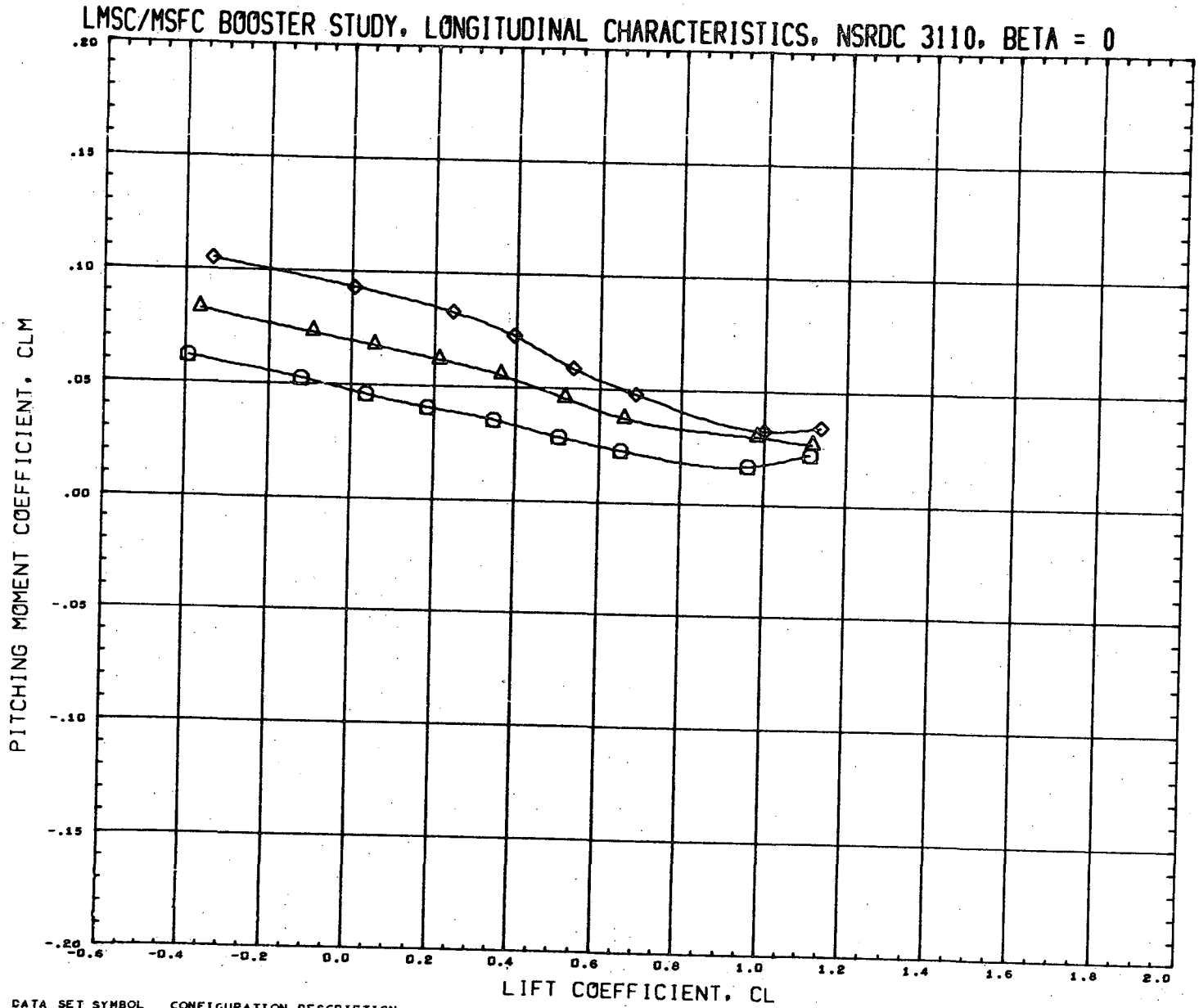
LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVTR	CANARD	INCIDC	CNDPOS
(RN2341) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	-10.000	0.000	3.000	1.000
(RN2345) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	-10.000	10.000	3.000	1.000
(RN2349) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	-10.000	20.000	3.000	1.000

MACH 0.380

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2341)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2345)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2349)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

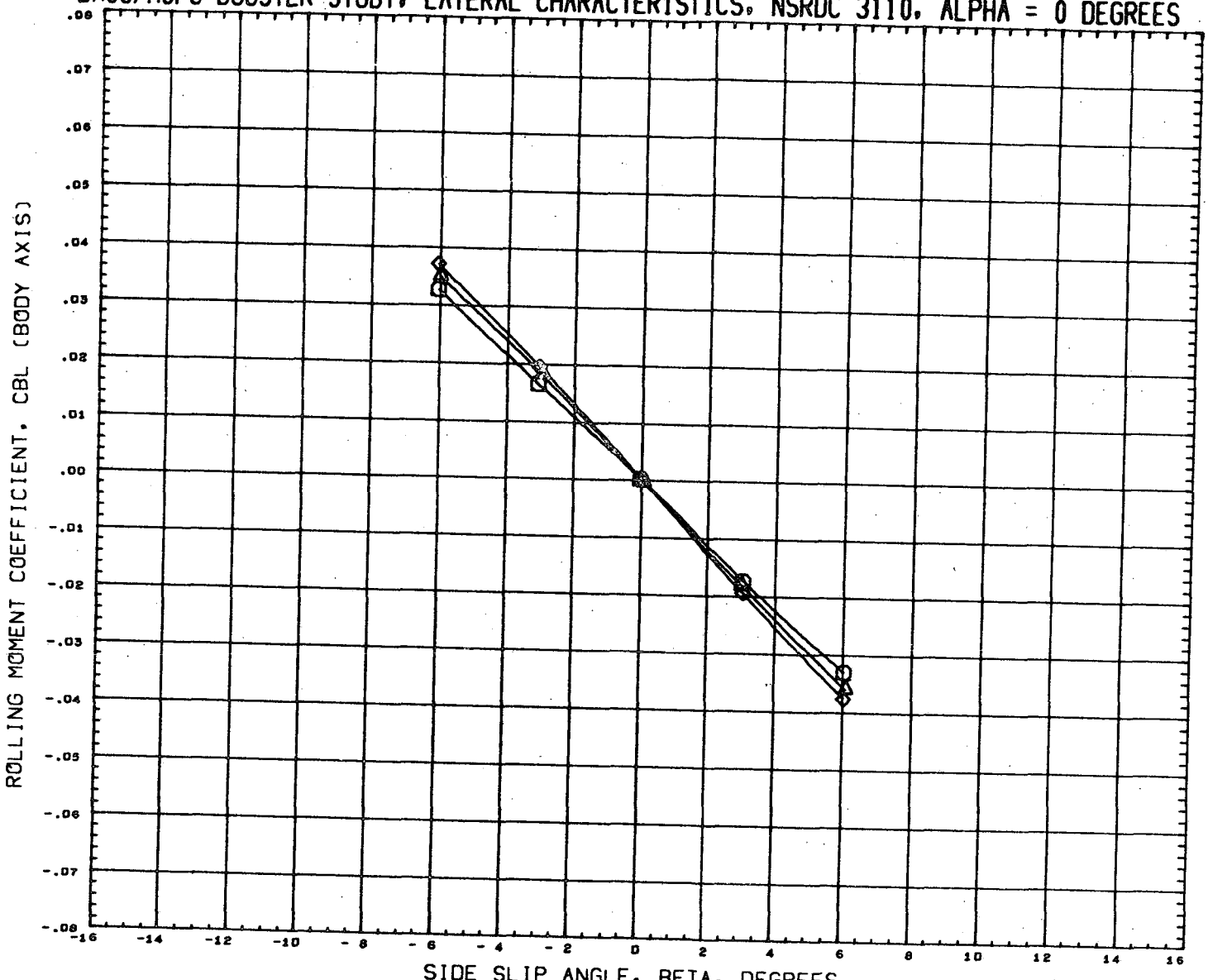
ELEVTR	CANARD	INCIDC	CNDFOS
-10.000	0.000	3.000	1.000
-10.000	10.000	3.000	1.000
-10.000	20.000	3.000	1.000

MACH 0.380

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



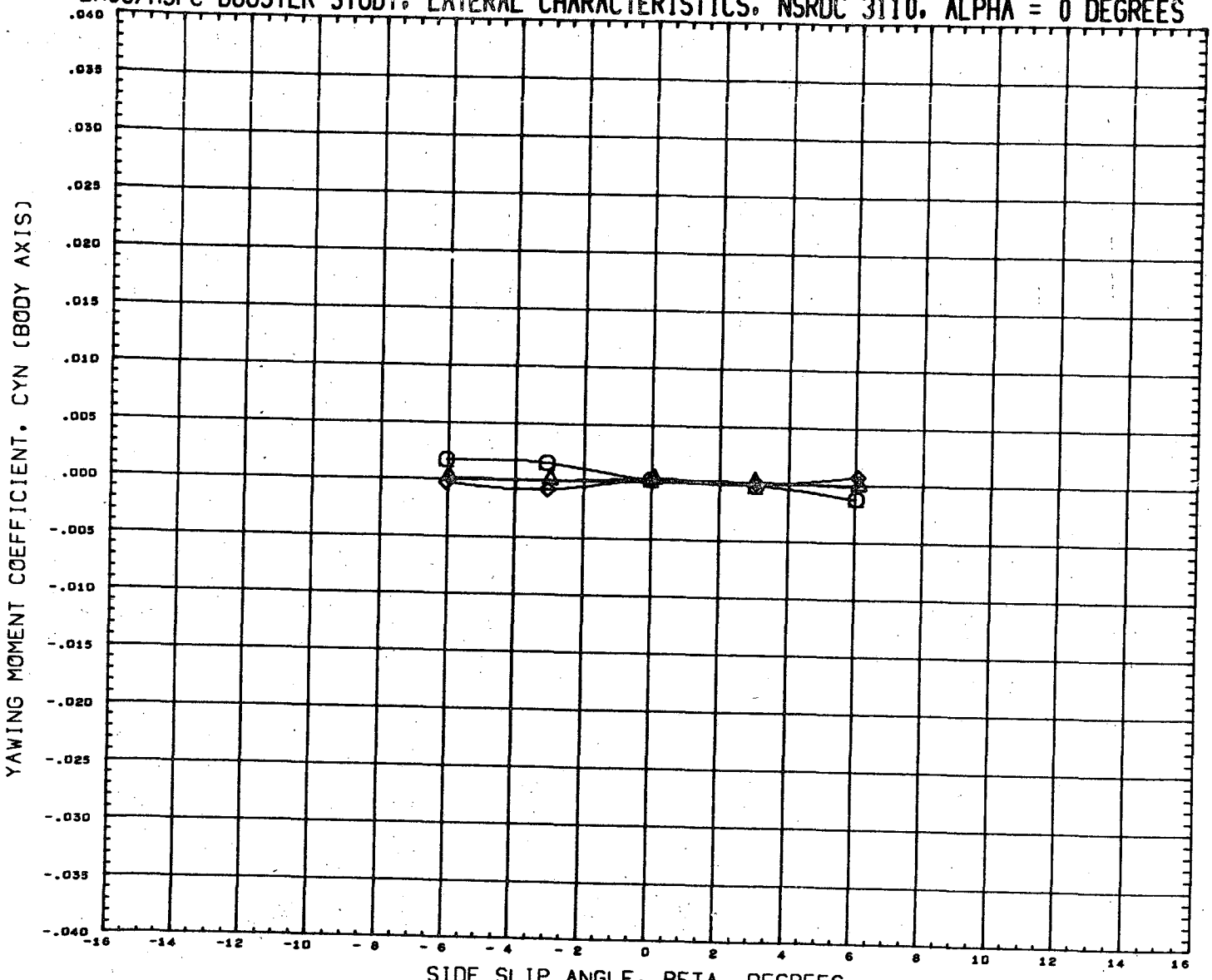
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2342)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2346)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2350)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
-10.000	0.000	3.000	1.000
-10.000	10.000	3.000	1.000
-10.000	20.000	3.000	1.000

MACH 0.379

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES



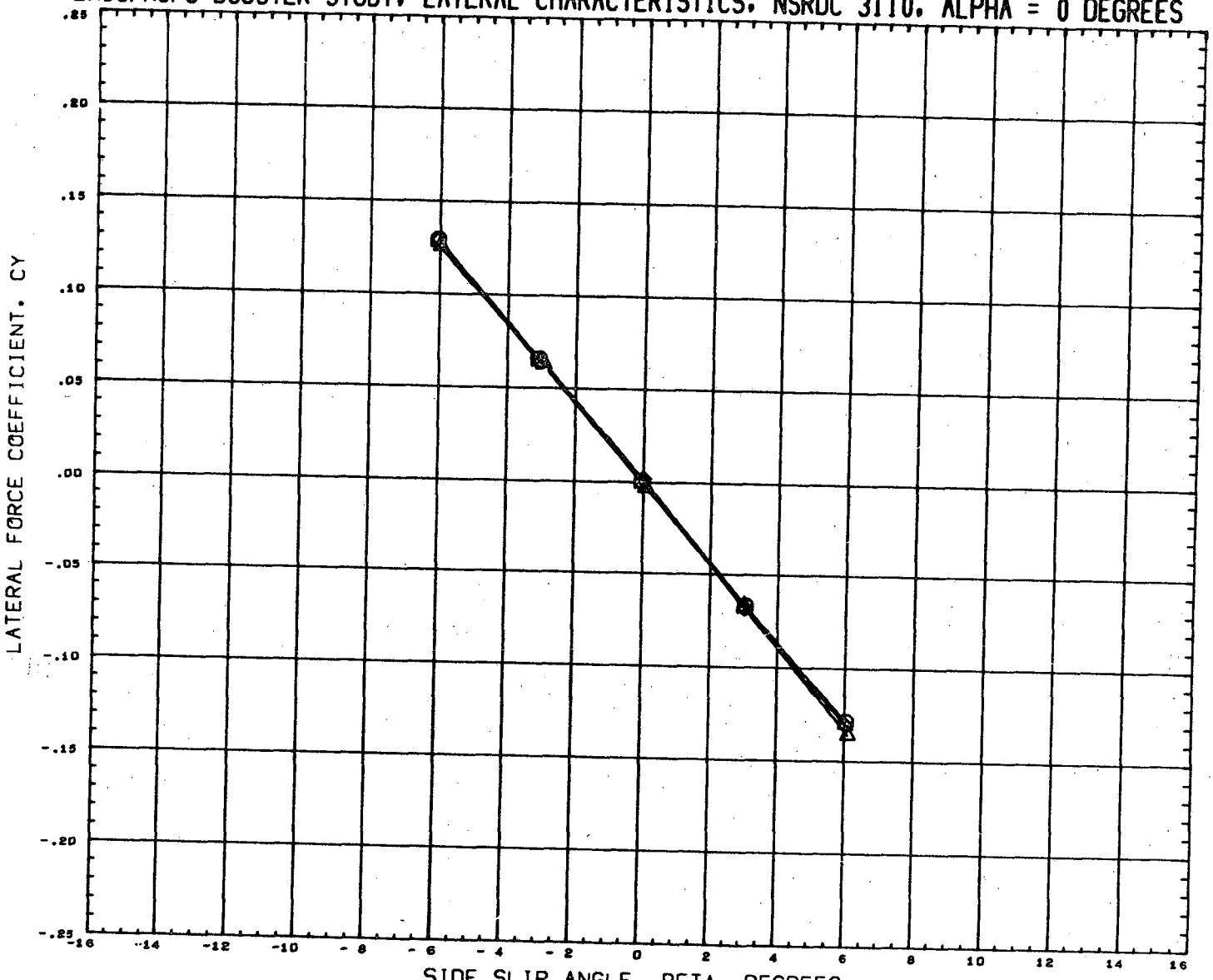
DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ELEVTR	CANARD	INCIDC	CNDPOS
(RN2342)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	-10.000	0.000	3.000	1.000
(RN2346)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	-10.000	10.000	3.000	1.000
(RN2350)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	-10.000	20.000	3.000	1.000

MACH 0.379

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



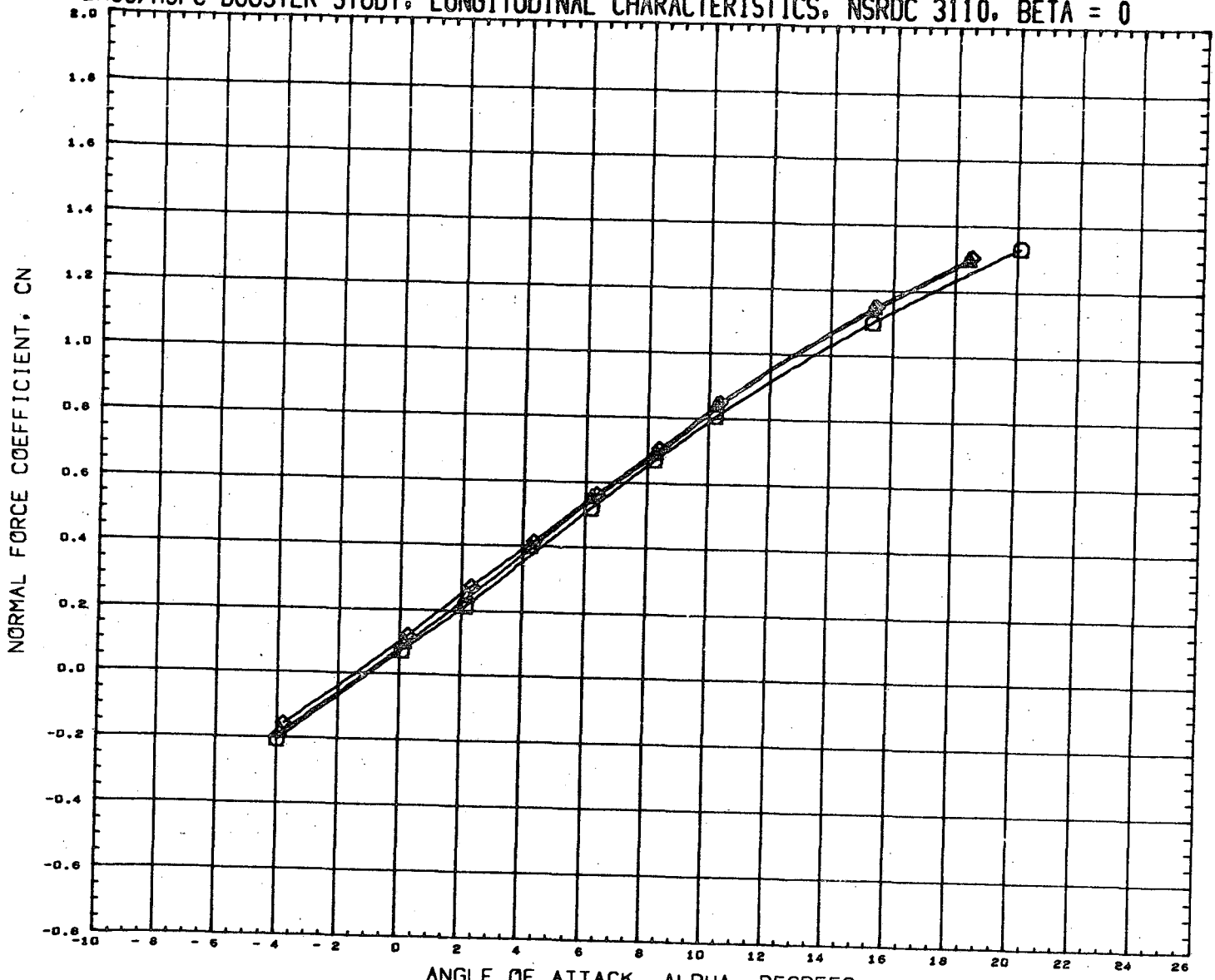
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2342)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2346)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2350)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
-10.000	0.000	3.000	1.000
-10.000	10.000	3.000	1.000
-10.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

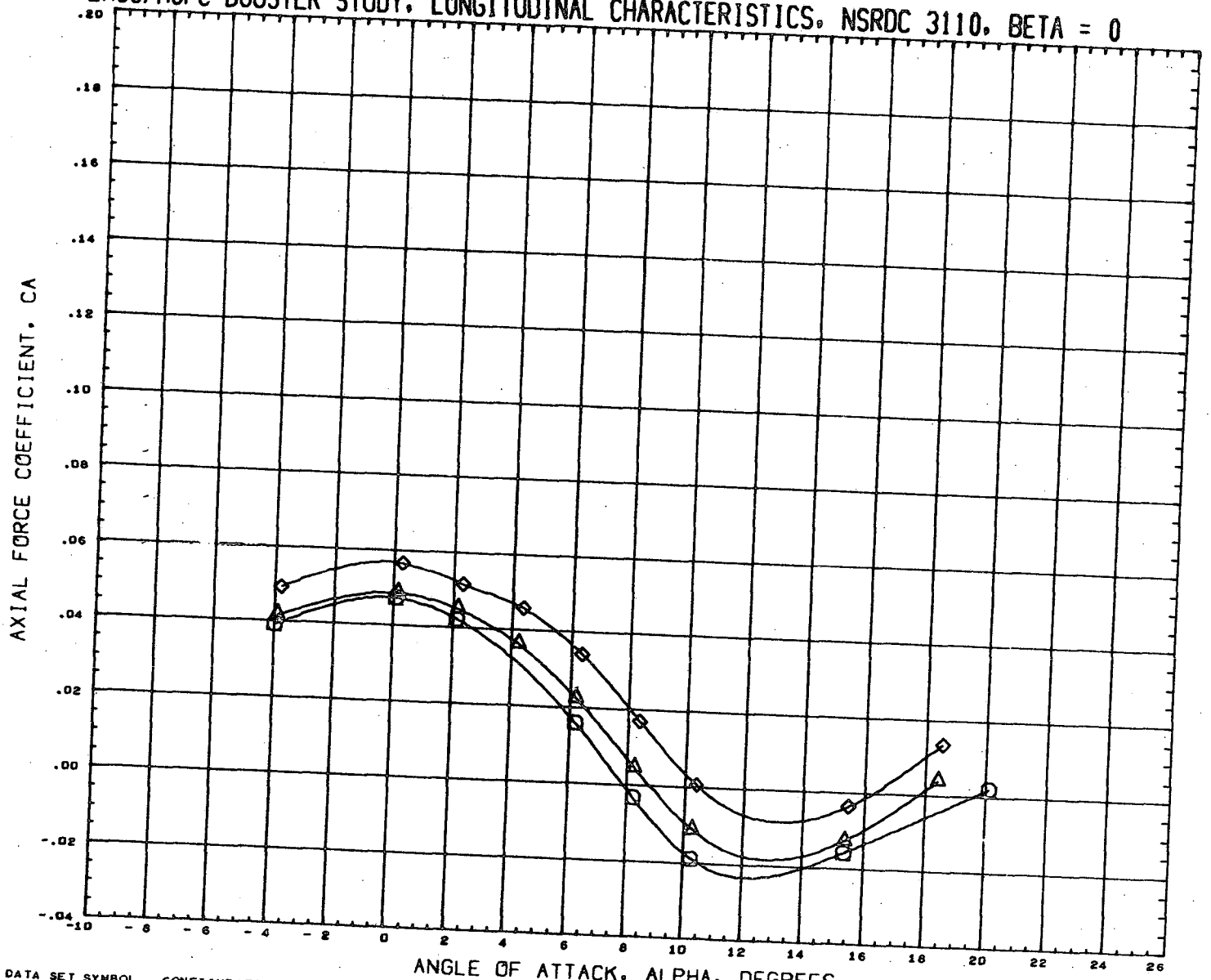
ELEVTR	CANARD	INCIDC	CNDPOS
0.000	0.000	3.000	1.000
0.000	10.000	3.000	1.000
0.000	20.000	3.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

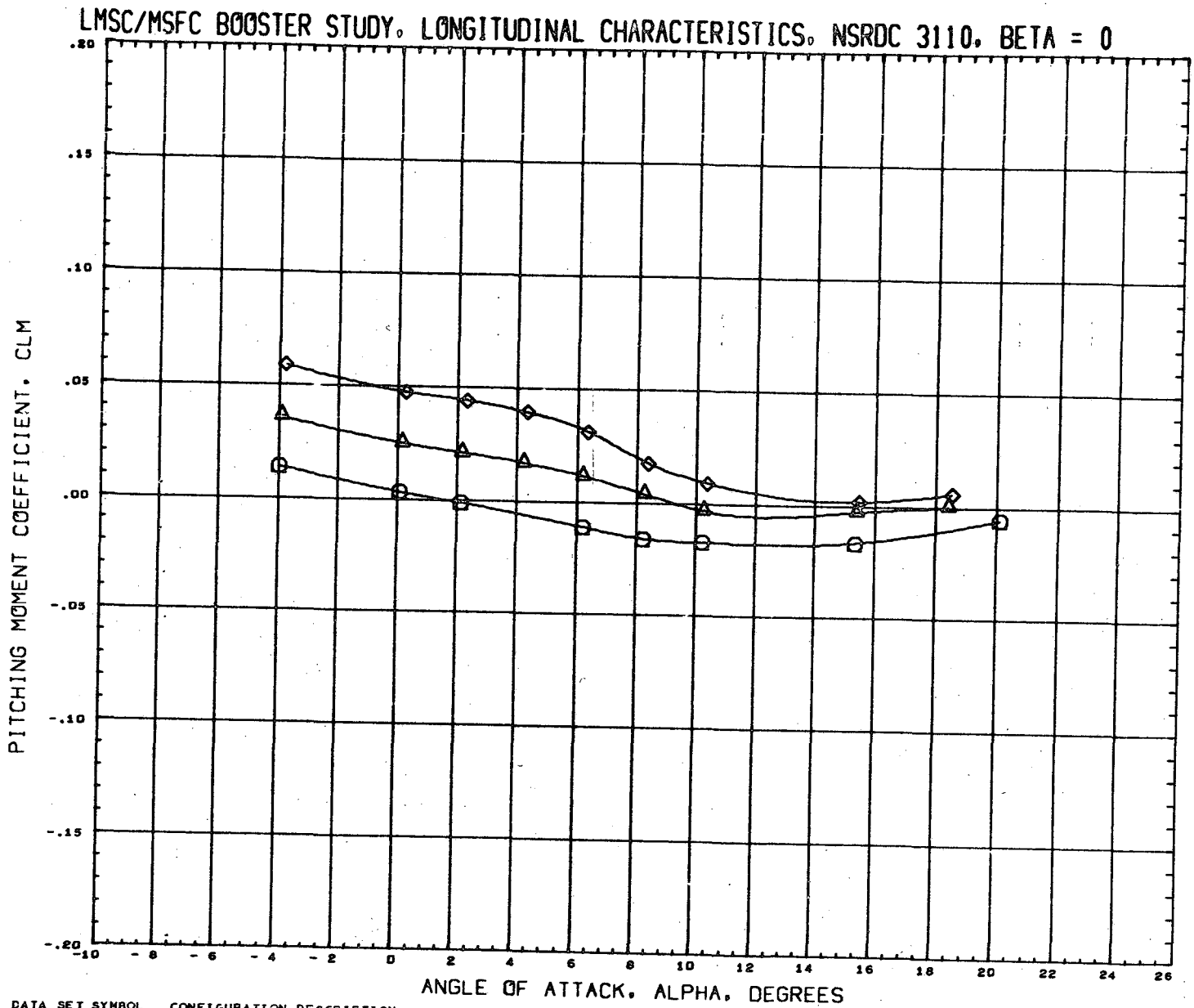
LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVTR	CANARD	INCIDC	CNDPOS
(RN2001) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	0.000	0.000	3.000	1.000
(RN2321) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	0.000	10.000	3.000	1.000
(RN2325) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	0.000	20.000	3.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



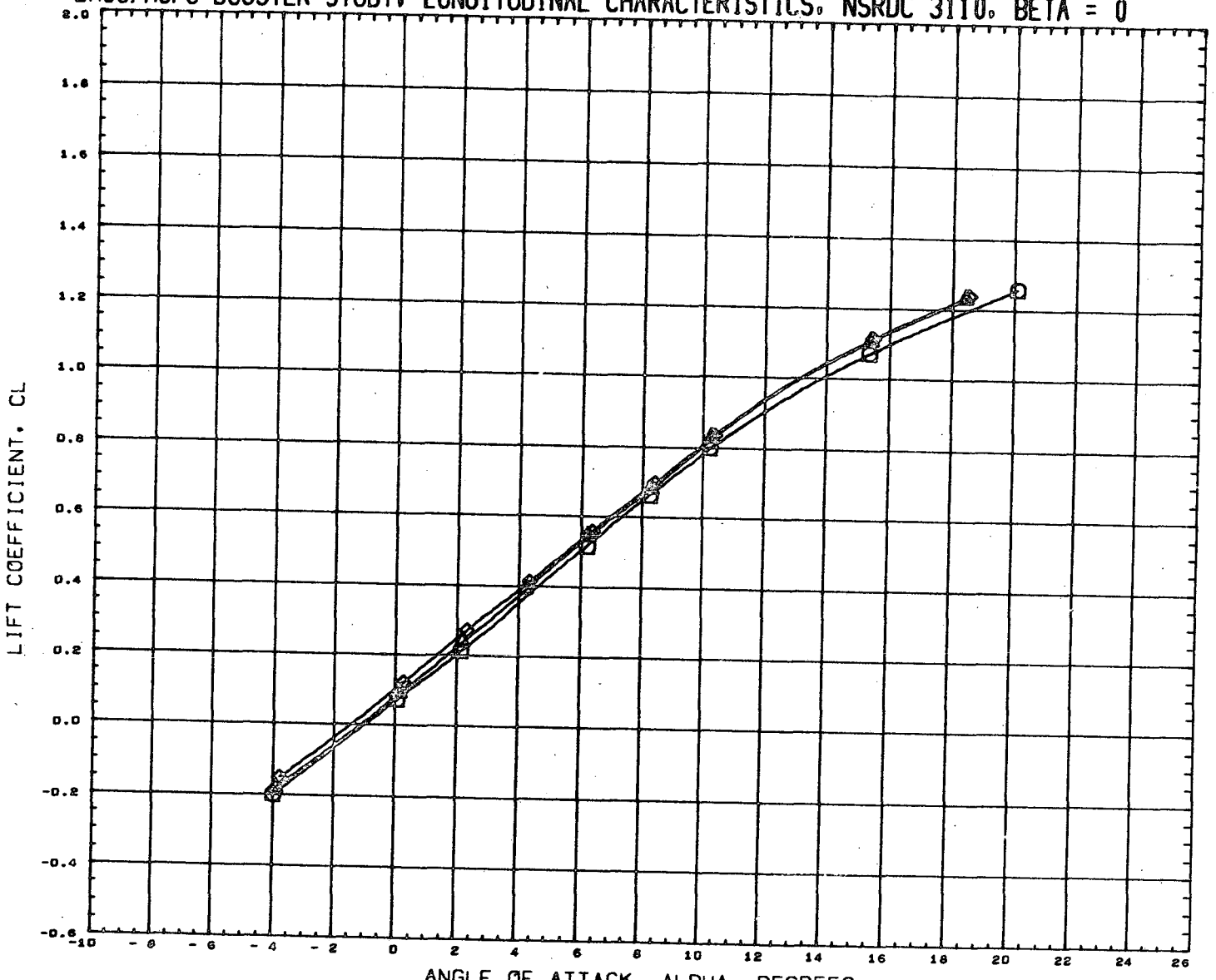
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2001)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
0.000	0.000	3.000	1.000
0.000	10.000	3.000	1.000
0.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

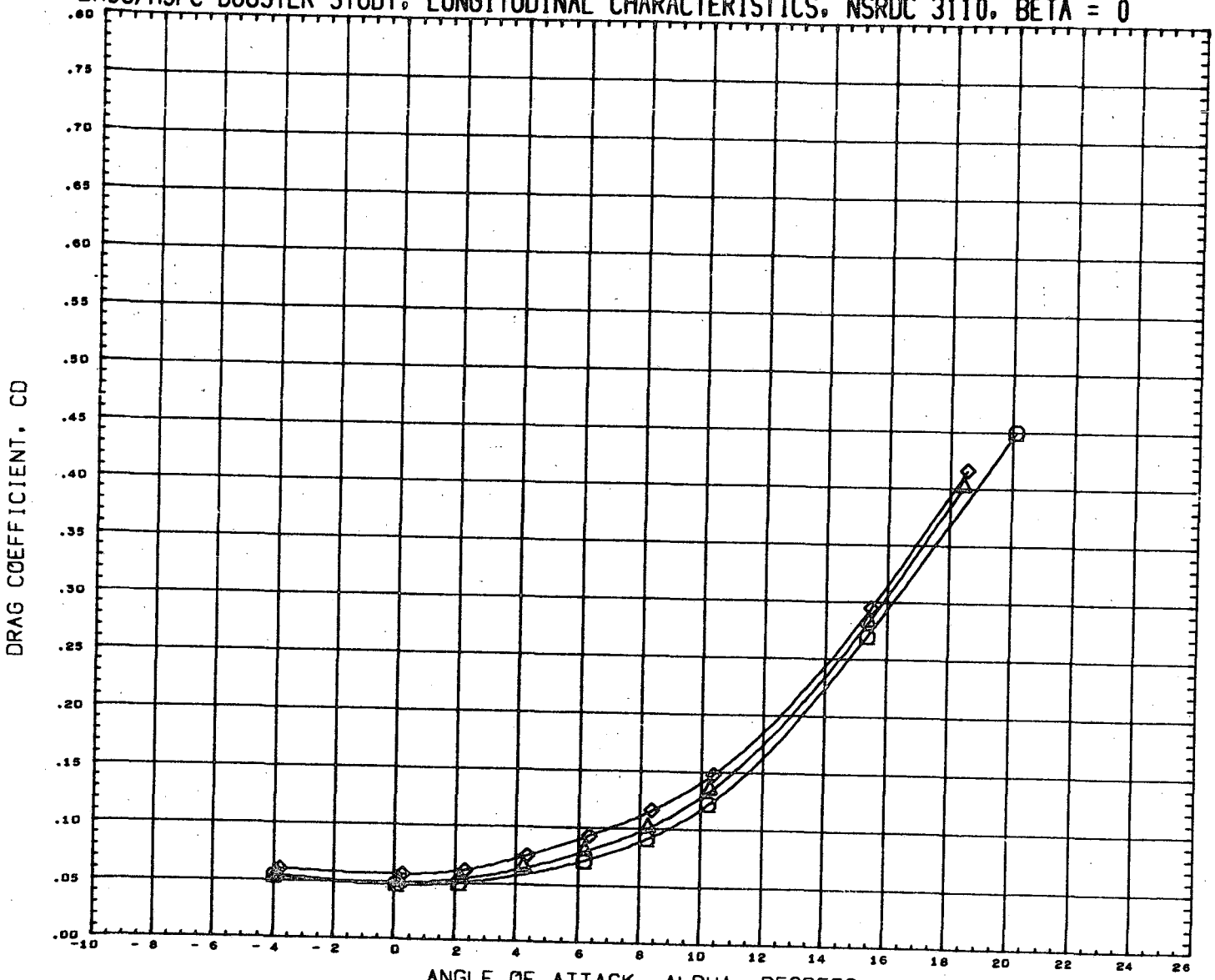
ELEVTR	CANARD	INCIDC	CNDPOS
0.000	0.000	3.000	1.000
0.000	10.000	3.000	1.000
0.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



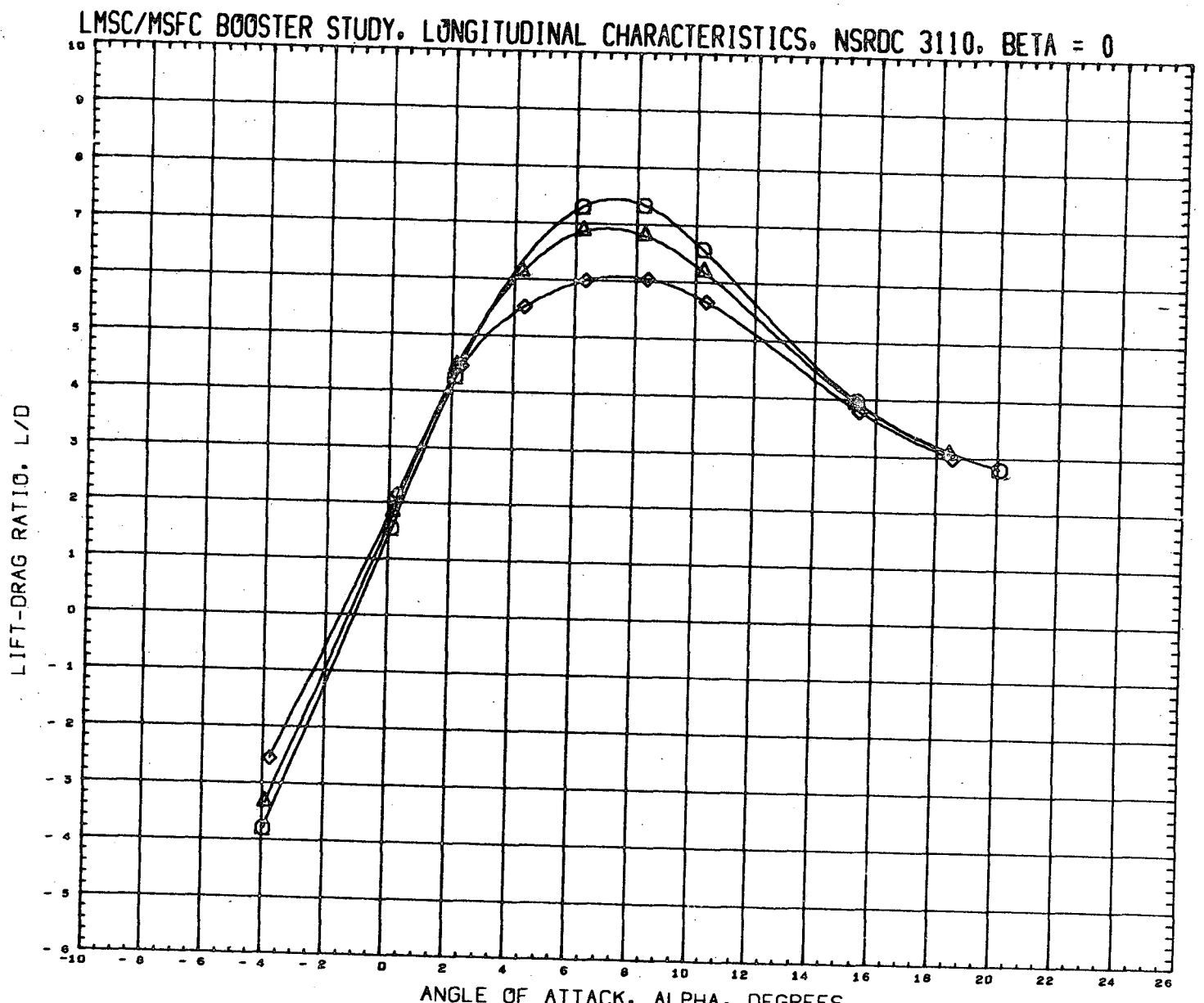
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2001) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
0.000	0.000	3.000	1.000
0.000	10.000	3.000	1.000
0.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381



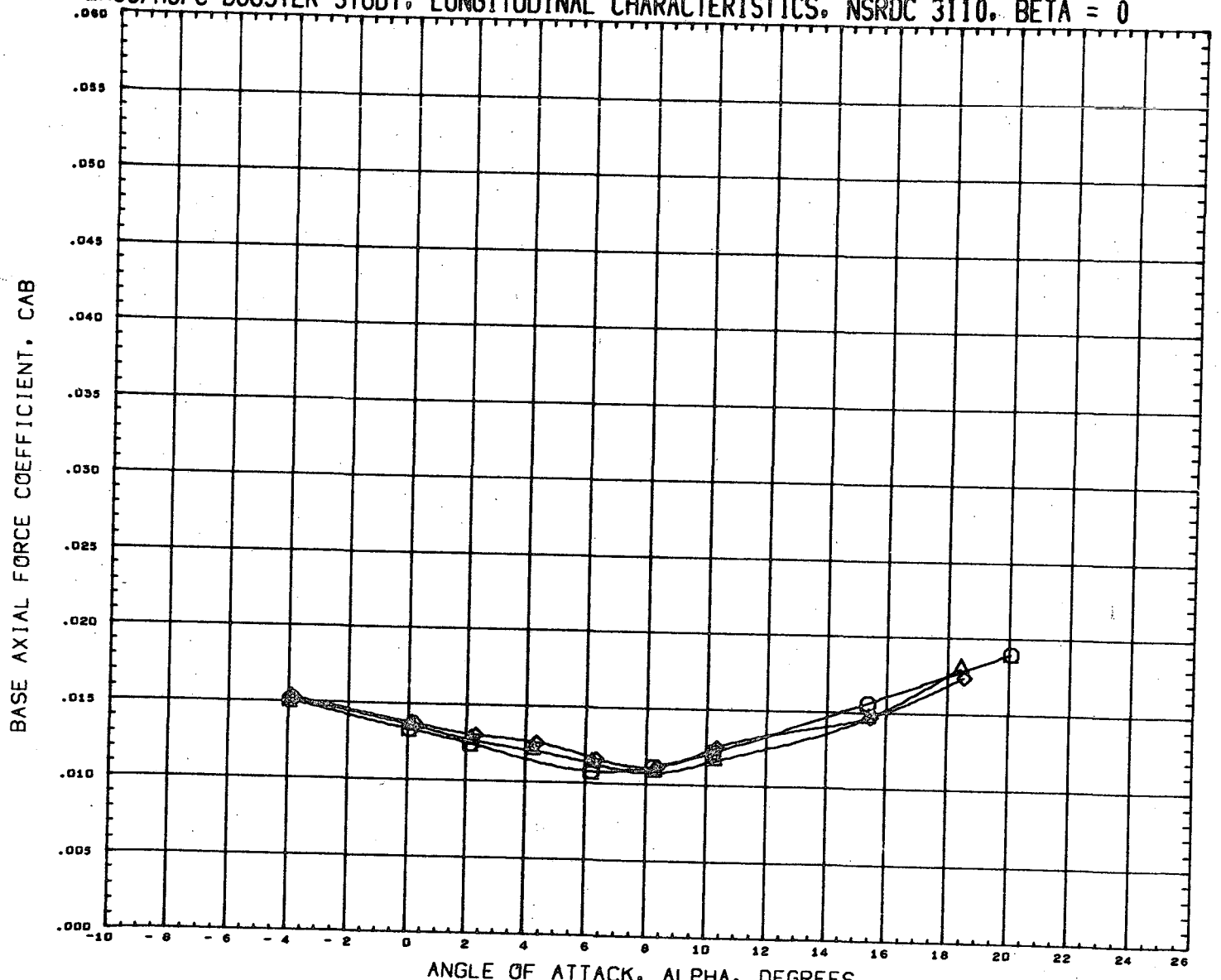
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2001)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
0.000	0.000	3.000	1.000
0.000	10.000	3.000	1.000
0.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

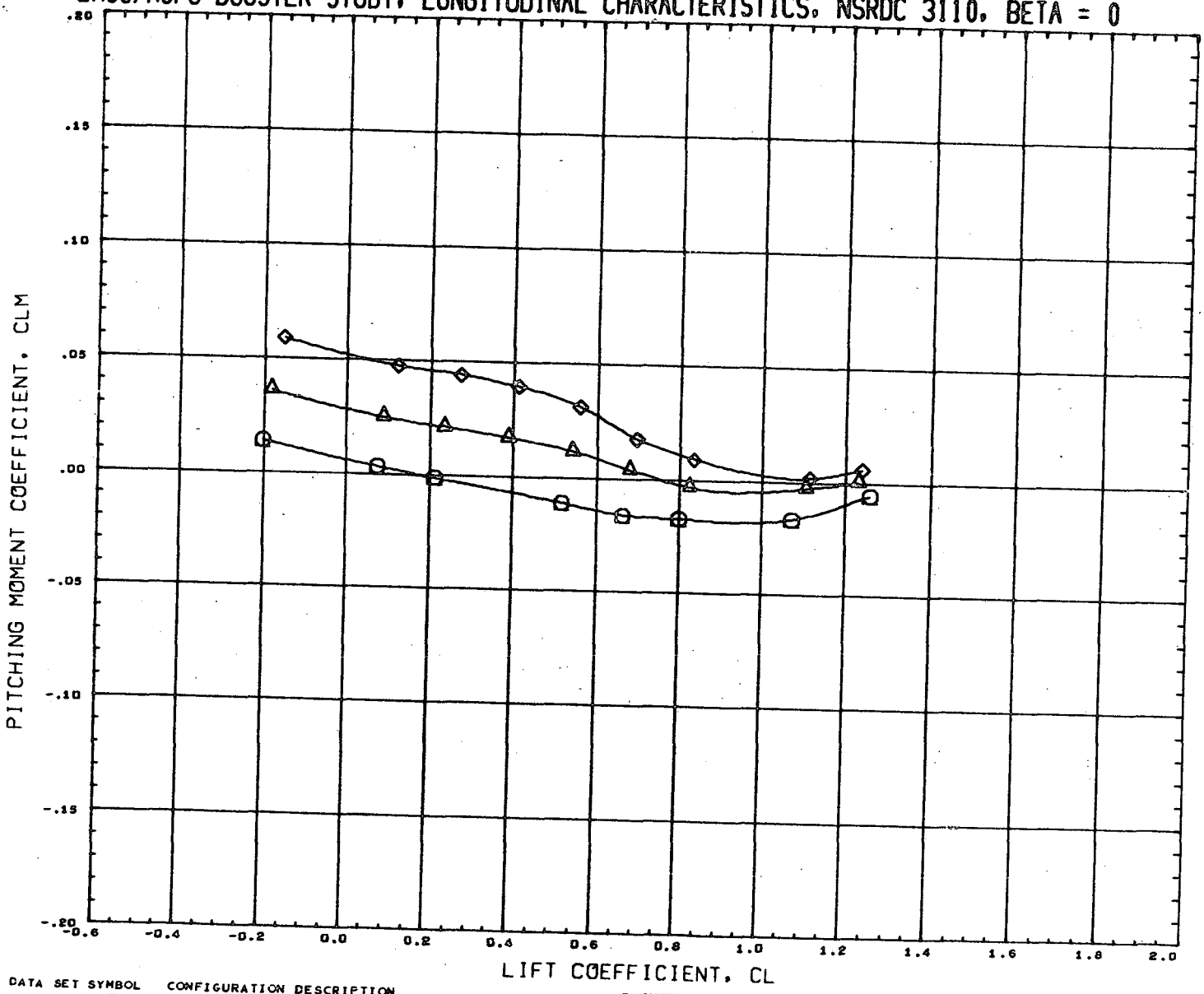
ELEVTR	CANARD	INCIDC	CNDPOS
0.000	0.000	3.000	1.000
0.000	10.000	3.000	1.000
0.000	20.000	3.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



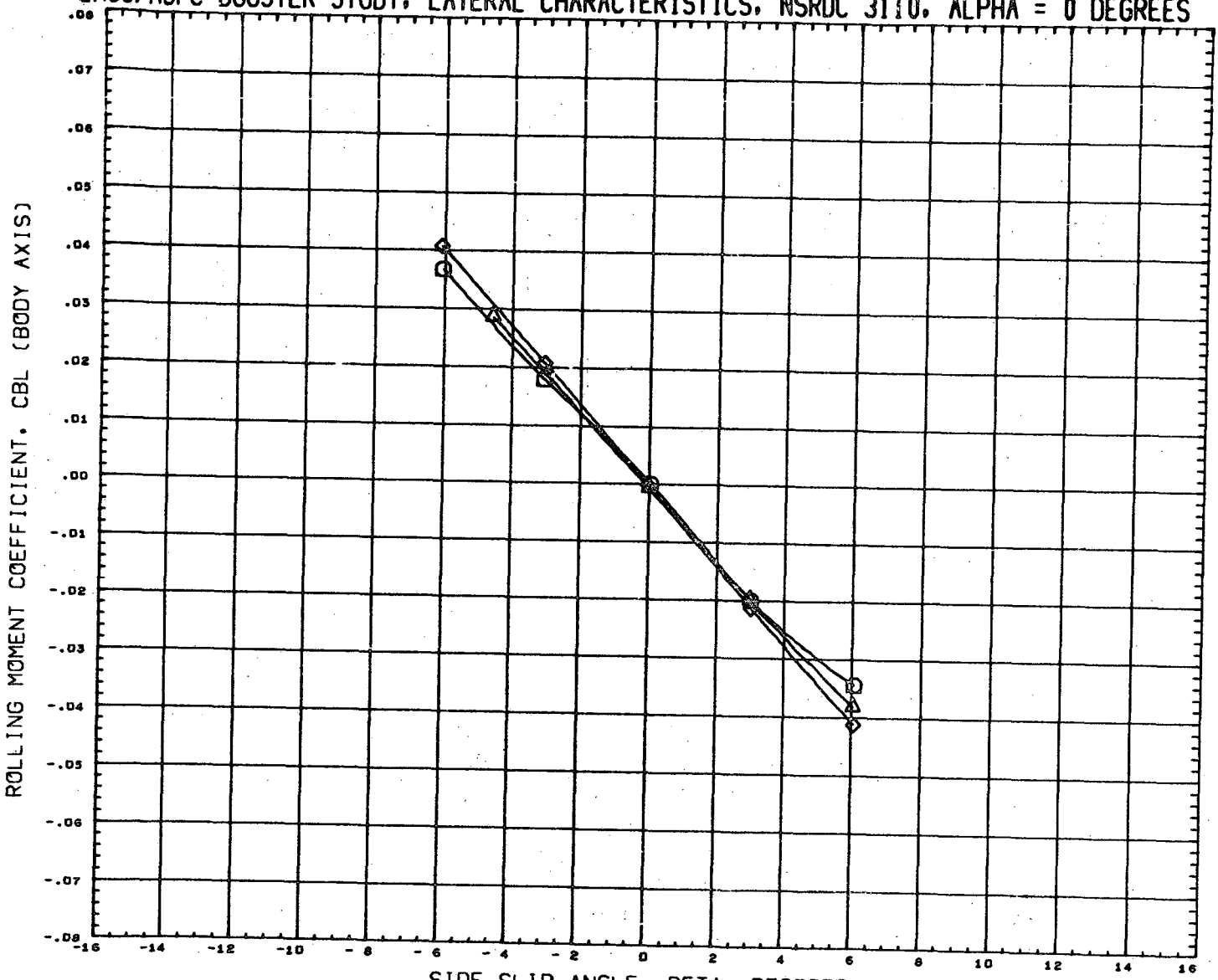
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2321)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2325)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
0.000	0.000	3.000	1.000
0.000	10.000	3.000	1.000
0.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2002) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2322) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2326) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

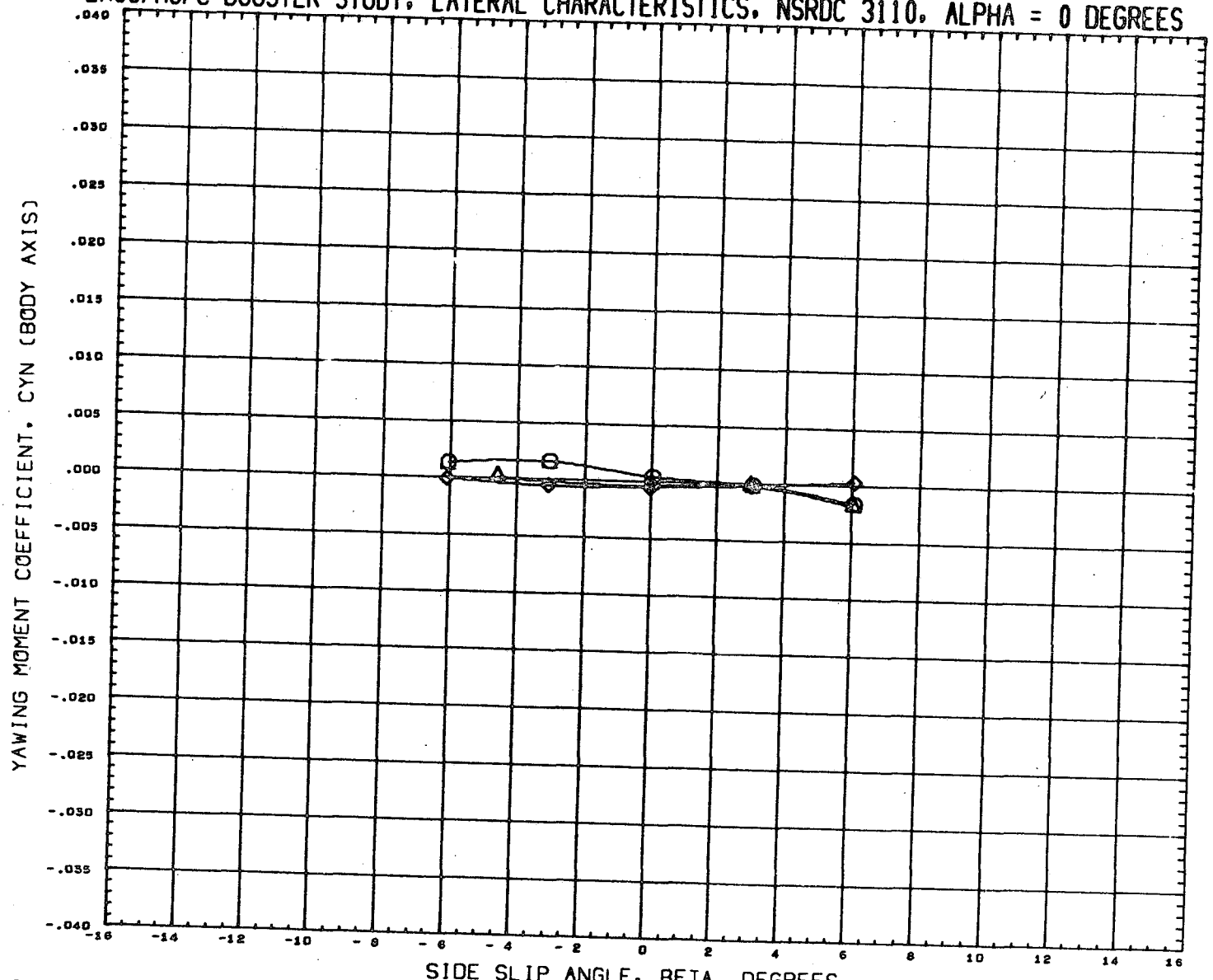
ELEVTR	CANARD	INCIDC	CNDPOS
0.000	0.000	3.000	1.000
0.000	10.000	3.000	1.000
0.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



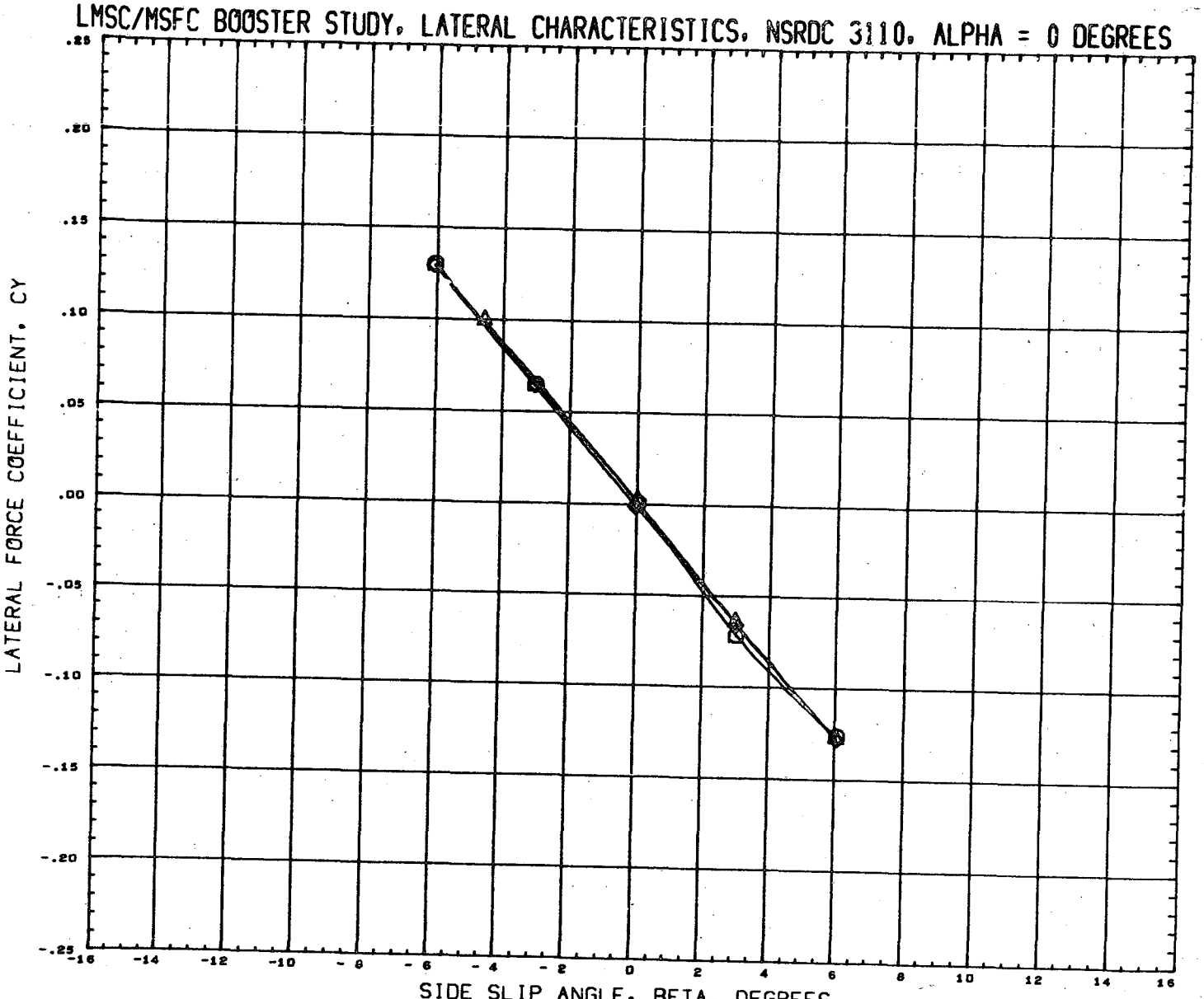
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2002)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2322)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2326)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDFOS
0.000	0.000	3.000	1.000
0.000	10.000	3.000	1.000
0.000	20.000	3.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



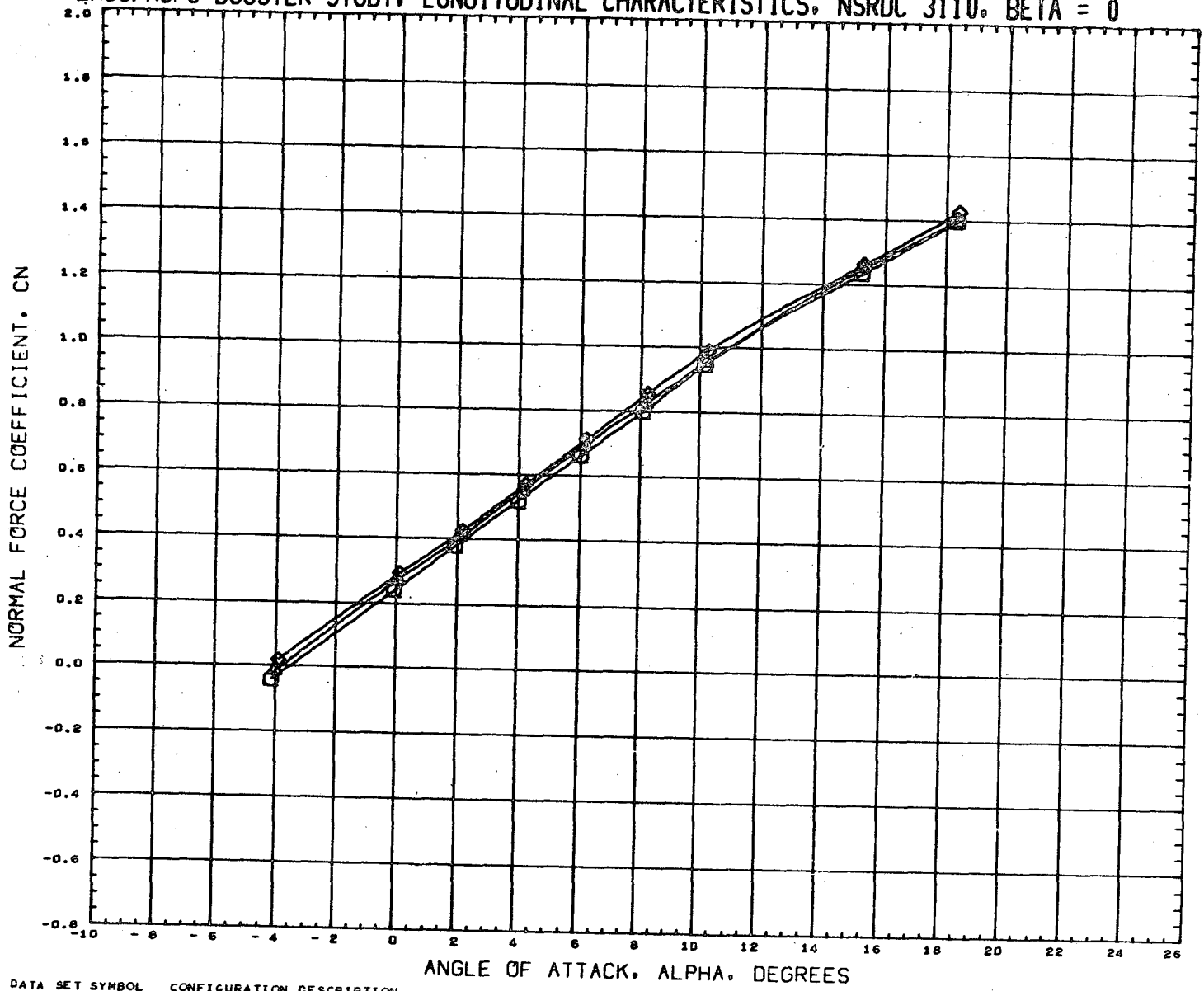
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2002) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2322) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2326) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDFOS
0.000	0.000	3.000	1.000
0.000	10.000	3.000	1.000
0.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0

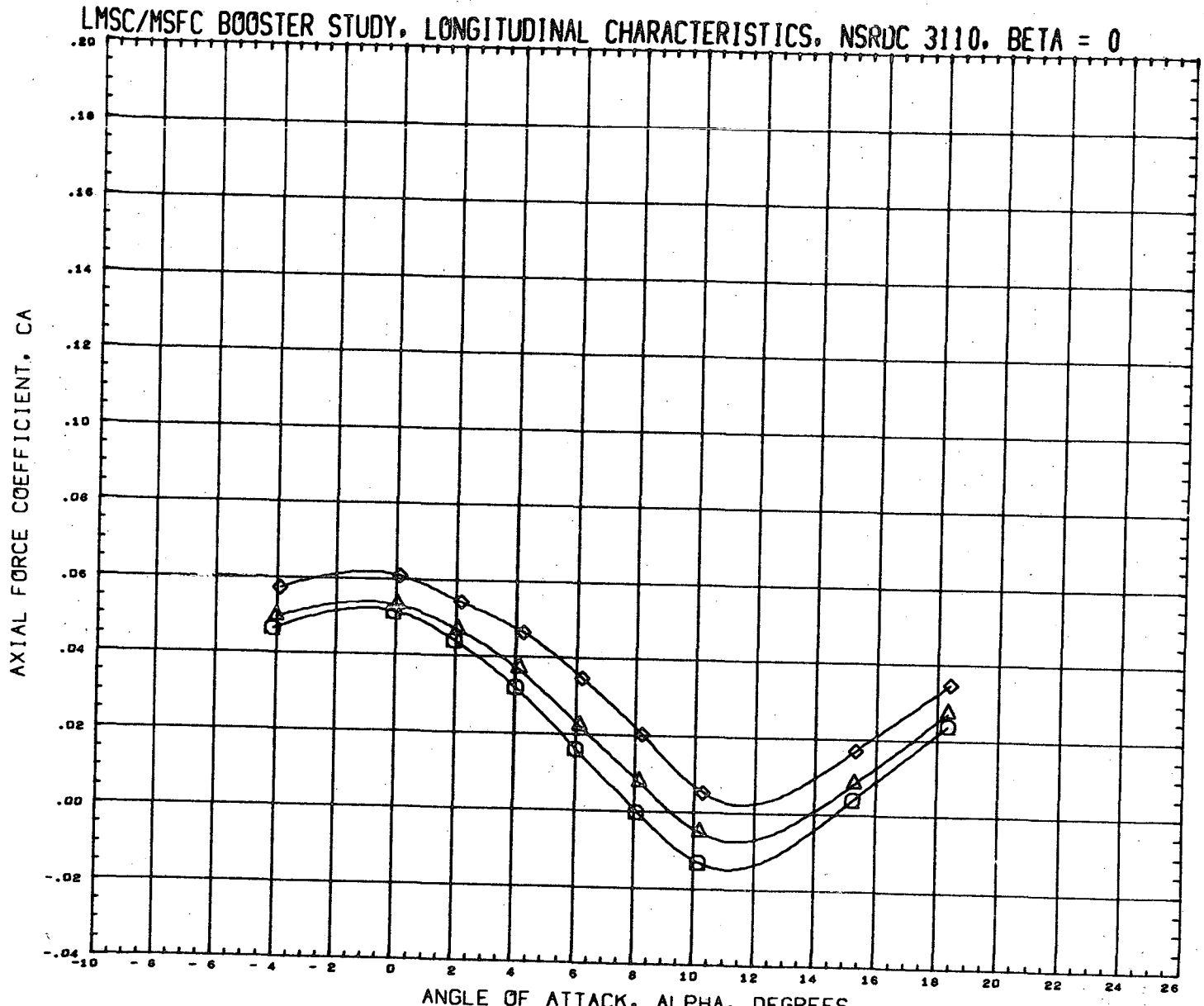


DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2353)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2357)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNOFOS
10.000	0.000	3.000	1.000
10.000	10.000	3.000	1.000
10.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379



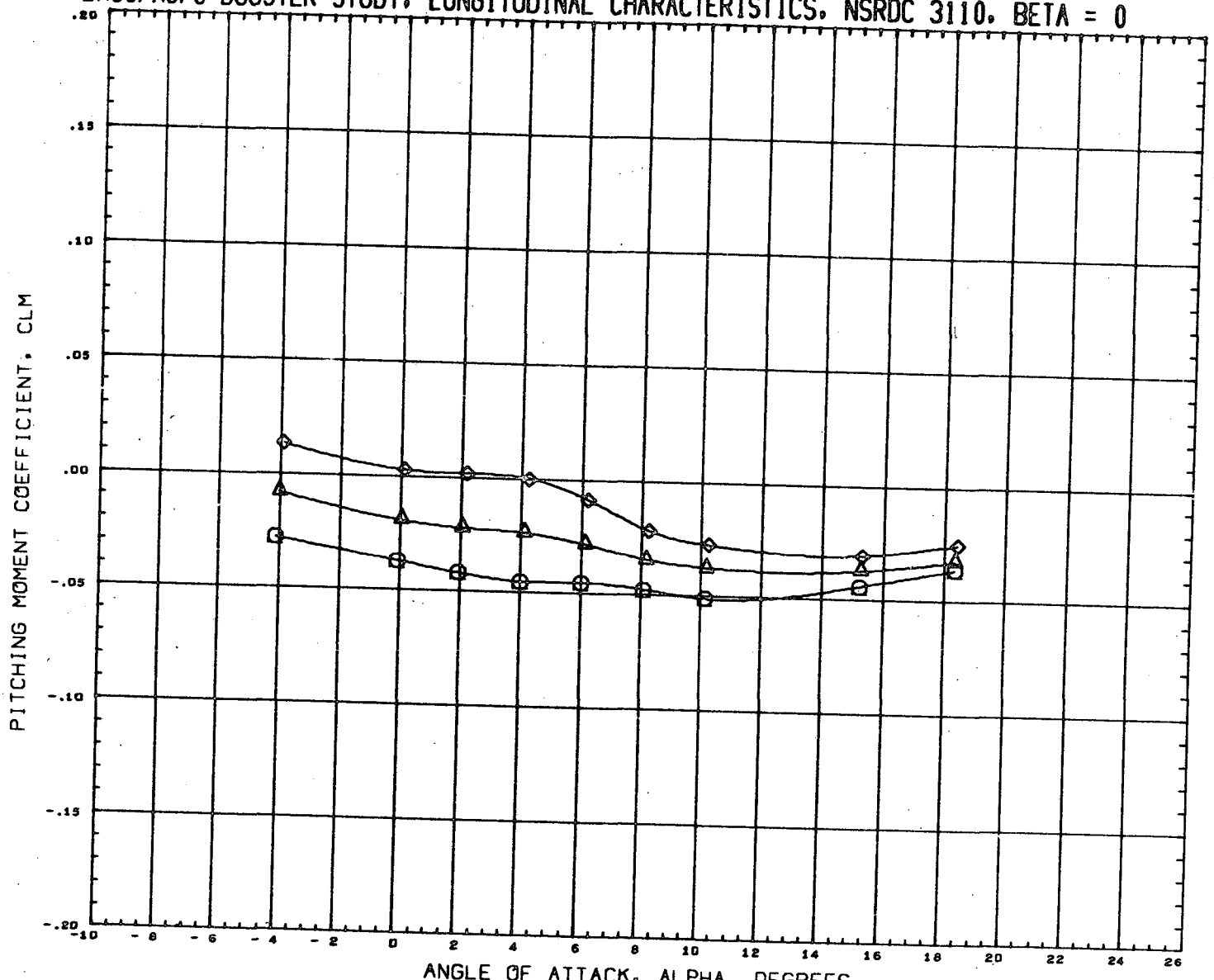
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVTR	CANARD	INCIDC	CNDPOS
(RN2353)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	10.000	0.000	3.000	1.000
(RN2357)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	10.000	10.000	3.000	1.000
(RN2361)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	10.000	20.000	3.000	1.000

MACH 0.379

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



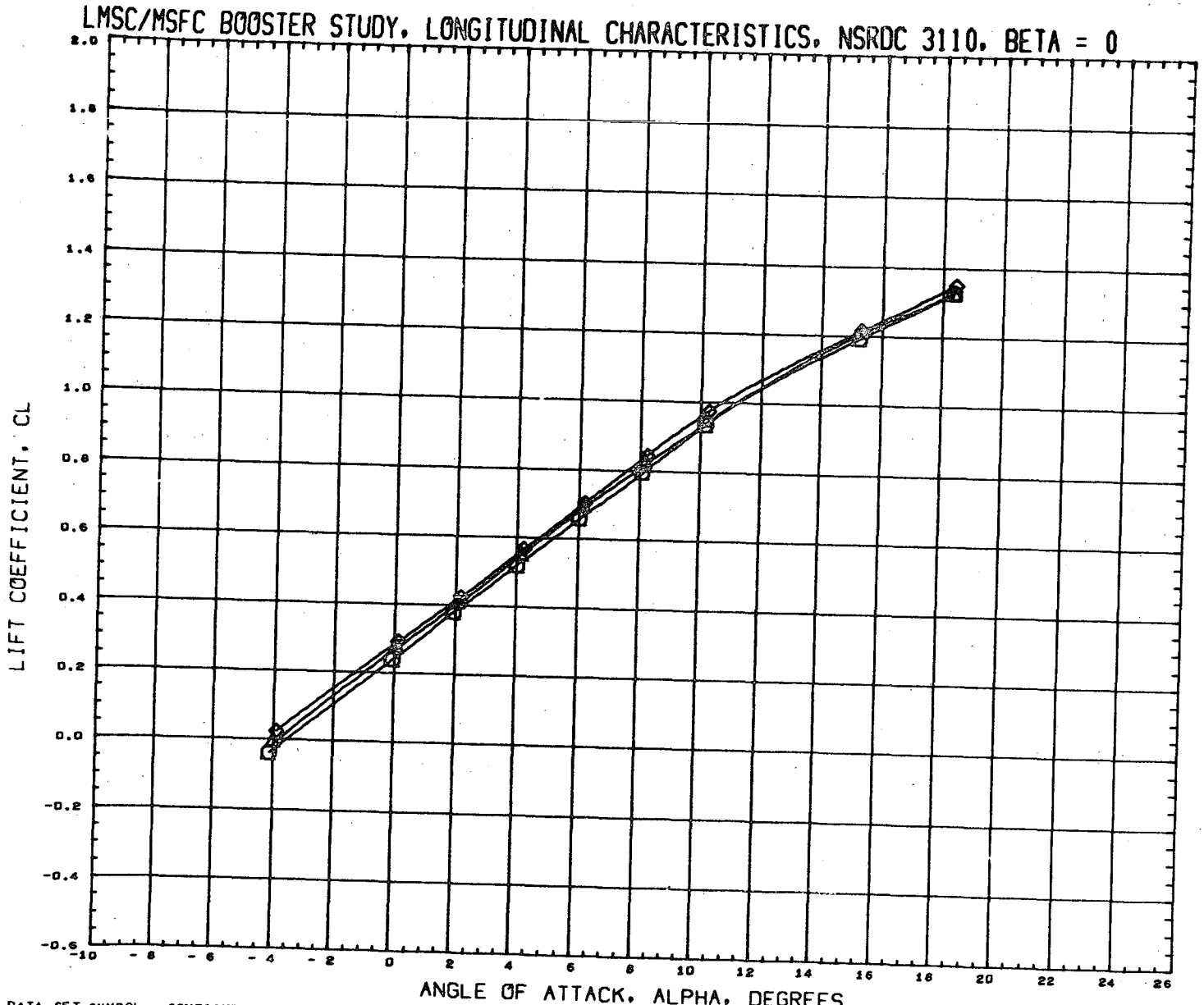
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2353)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2357)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
10.000	0.000	3.000	1.000
10.000	10.000	3.000	1.000
10.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2353)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2357)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

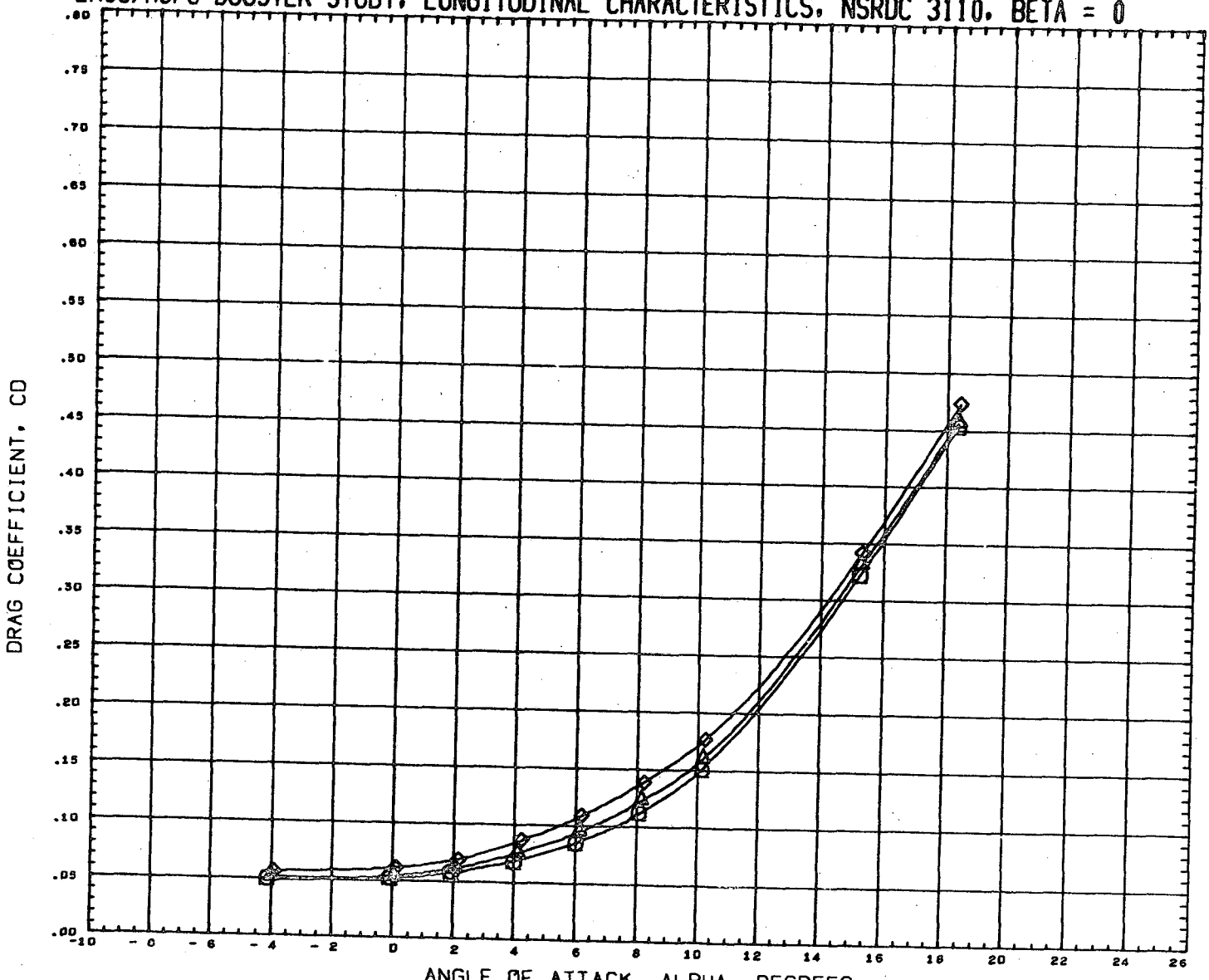
ELEVTR	CANARD	INCIDC	CNDPOS
10.000	0.000	3.000	1.000
10.000	10.000	3.000	1.000
10.000	20.000	3.000	1.000

MACH 0.379

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

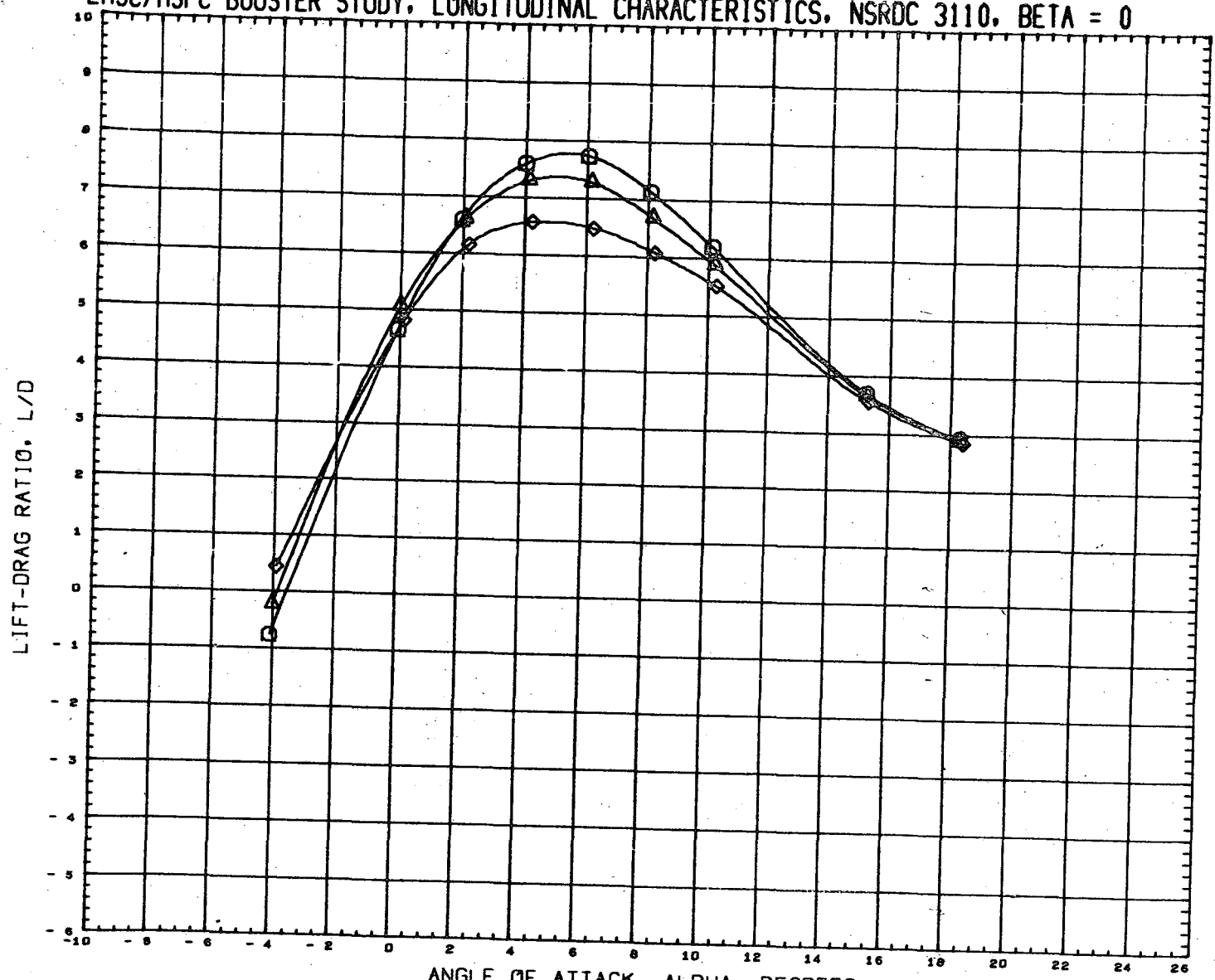


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVTR	CANARD	INCIDC	CNDPOS
(RN2353) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	10.000	0.000	3.000	1.000
(RN2357) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	10.000	10.000	3.000	1.000
(RN2361) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	10.000	20.000	3.000	1.000

MACH 0.379

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2353)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2357)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

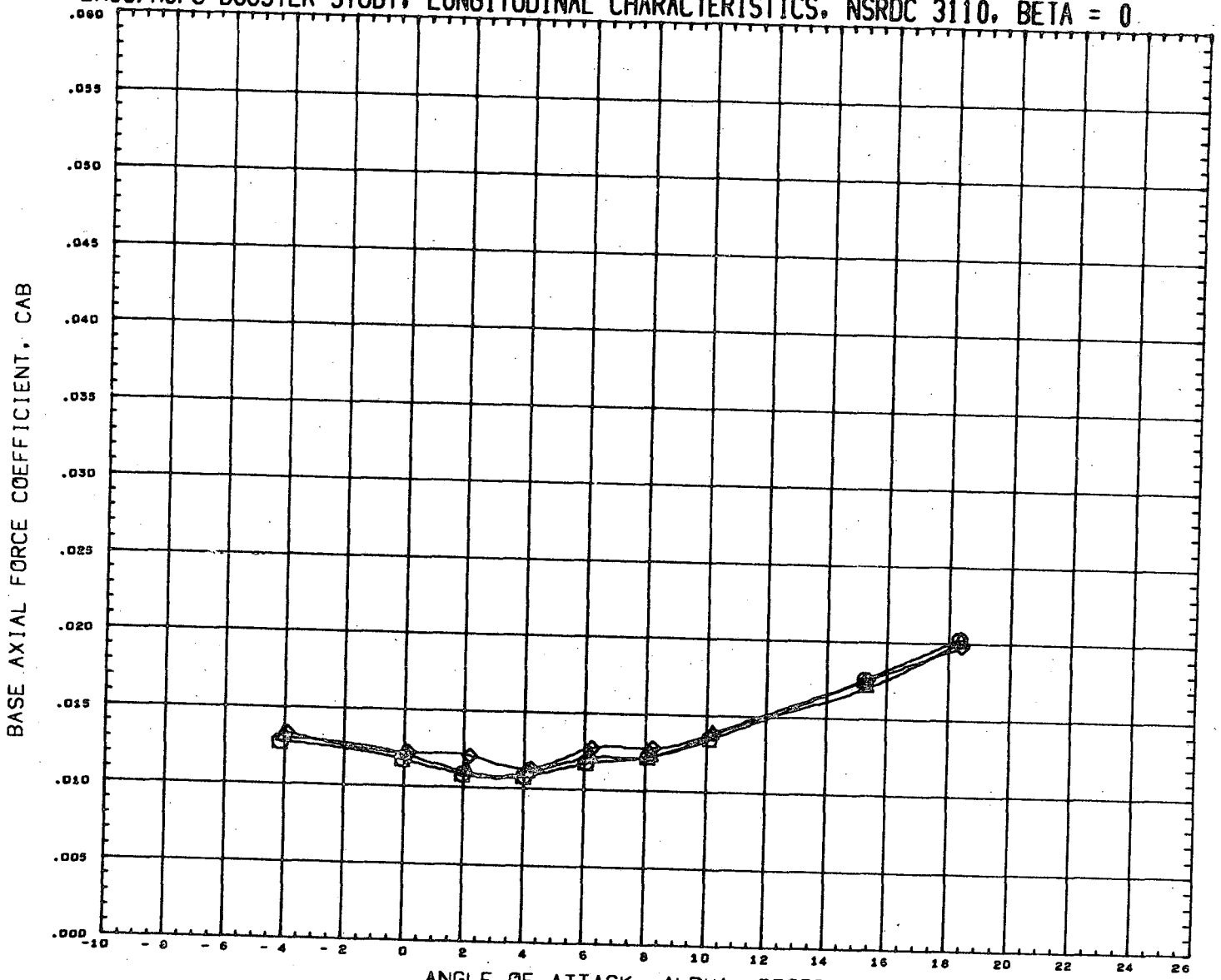
ELEVTR	CANARD	INCIDC	CNDFOS
10.000	0.000	3.000	1.000
10.000	10.000	3.000	1.000
10.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



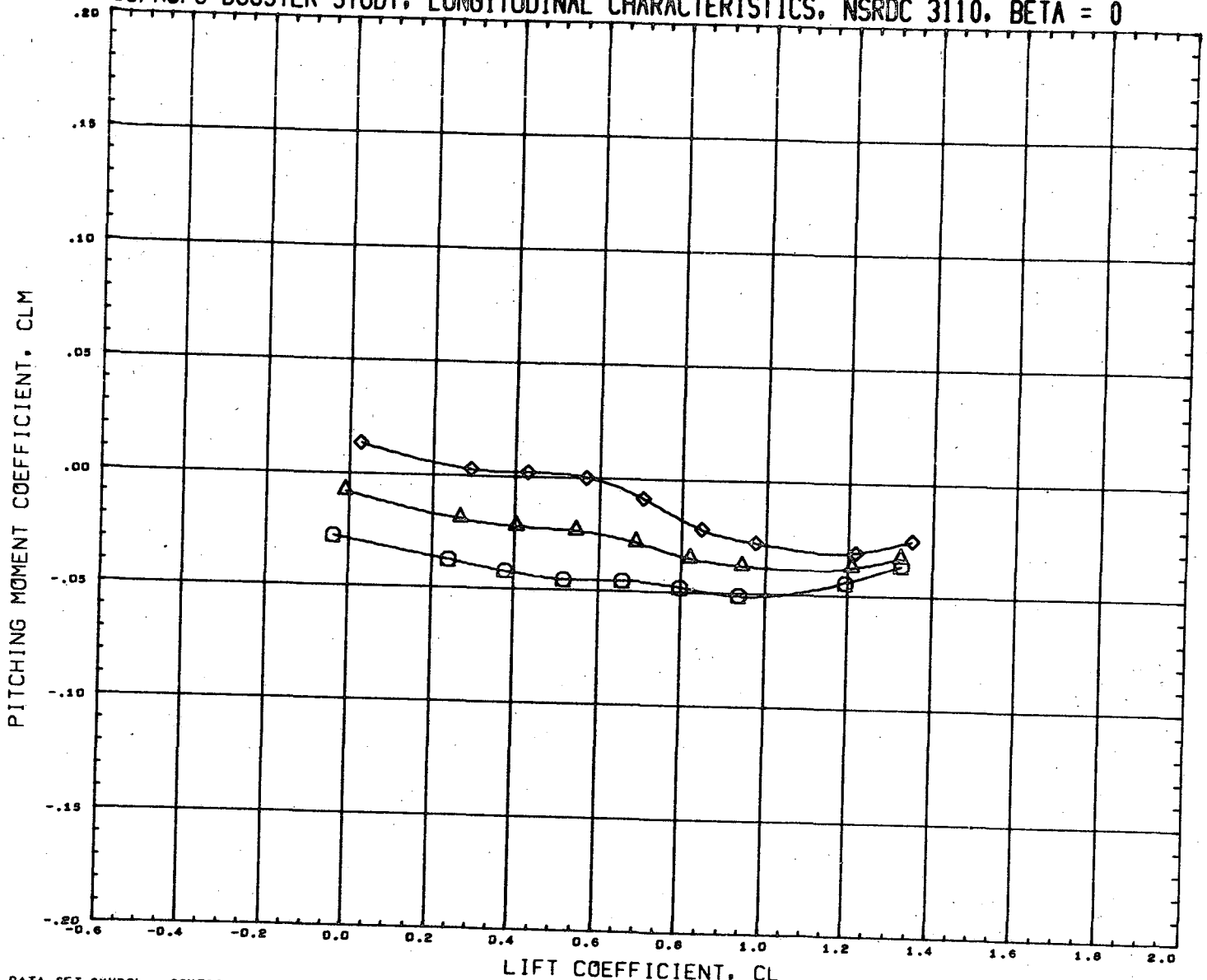
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2353)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2357)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
10.000	0.000	3.000	1.000
10.000	10.000	3.000	1.000
10.000	20.000	3.000	1.000

MACH 0.379

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2353)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2357)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2361)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

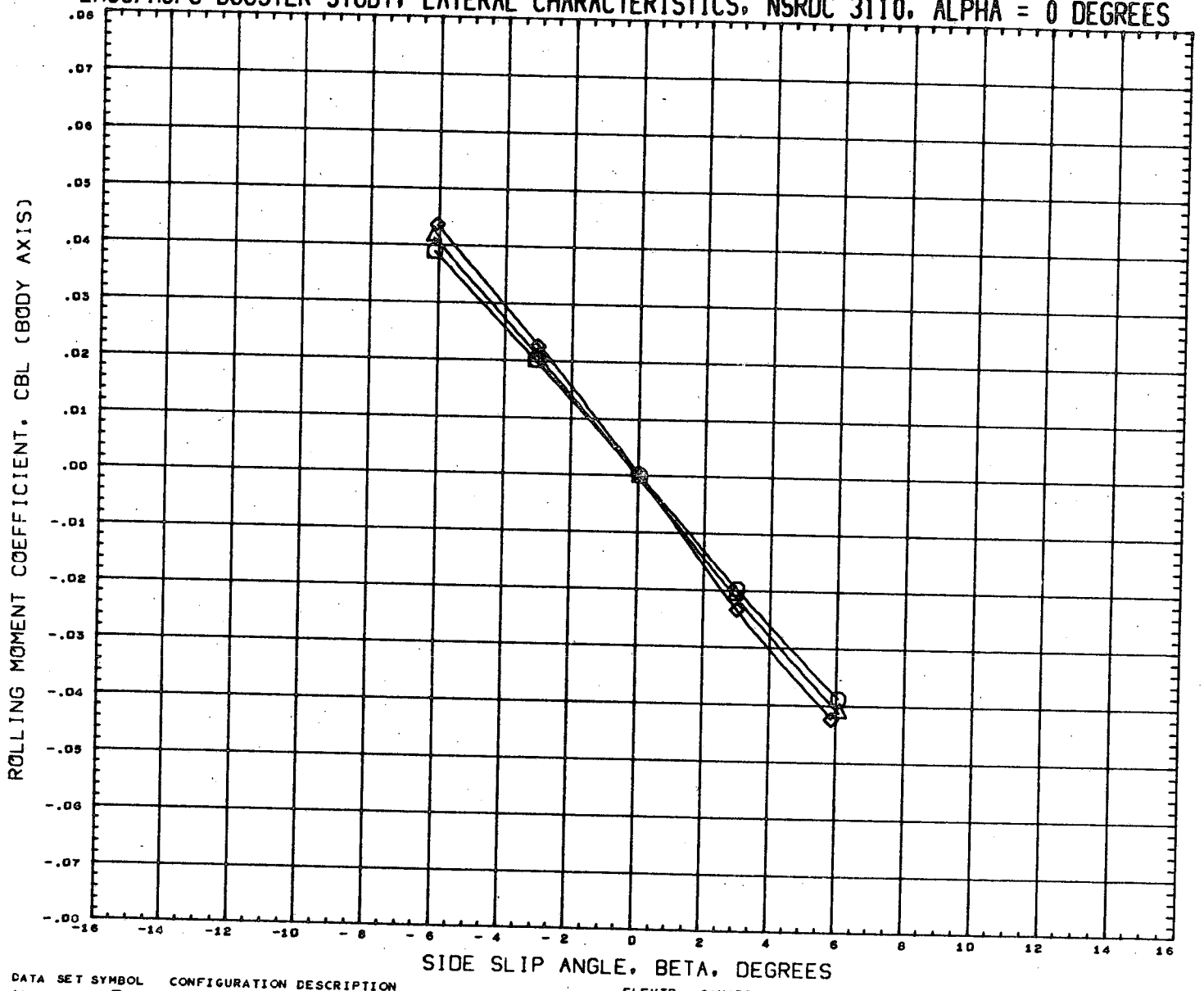
ELEVTR	CANARD	INCIDC	CNDPOS
10.000	0.000	3.000	1.000
10.000	10.000	3.000	1.000
10.000	20.000	3.000	1.000

MACH 0.379

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



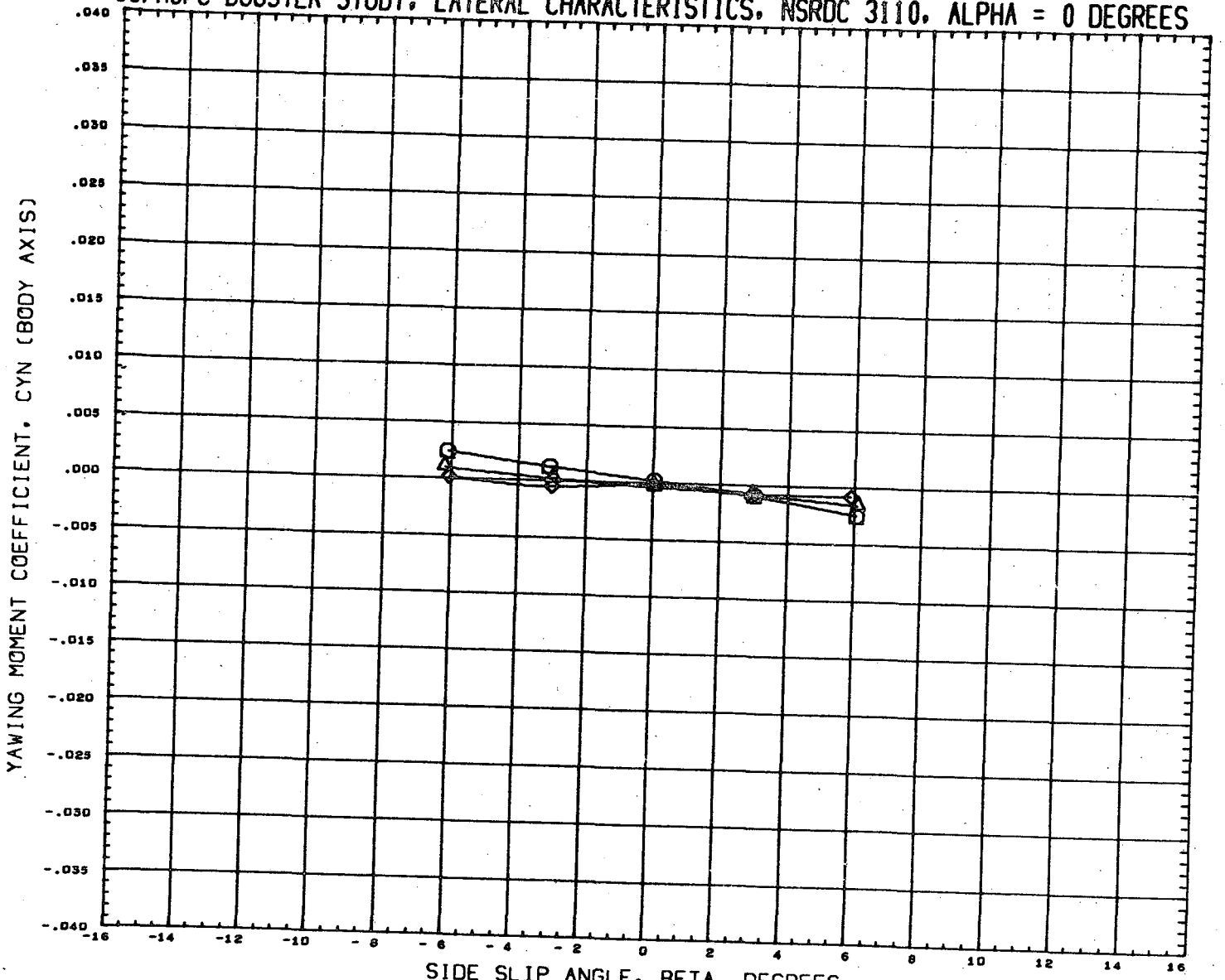
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2354)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2358)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2362)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDFOS
10.000	0.000	3.000	1.000
10.000	10.000	3.000	1.000
10.000	20.000	3.000	1.000

MACH 0.379

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2354)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2358)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2362)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

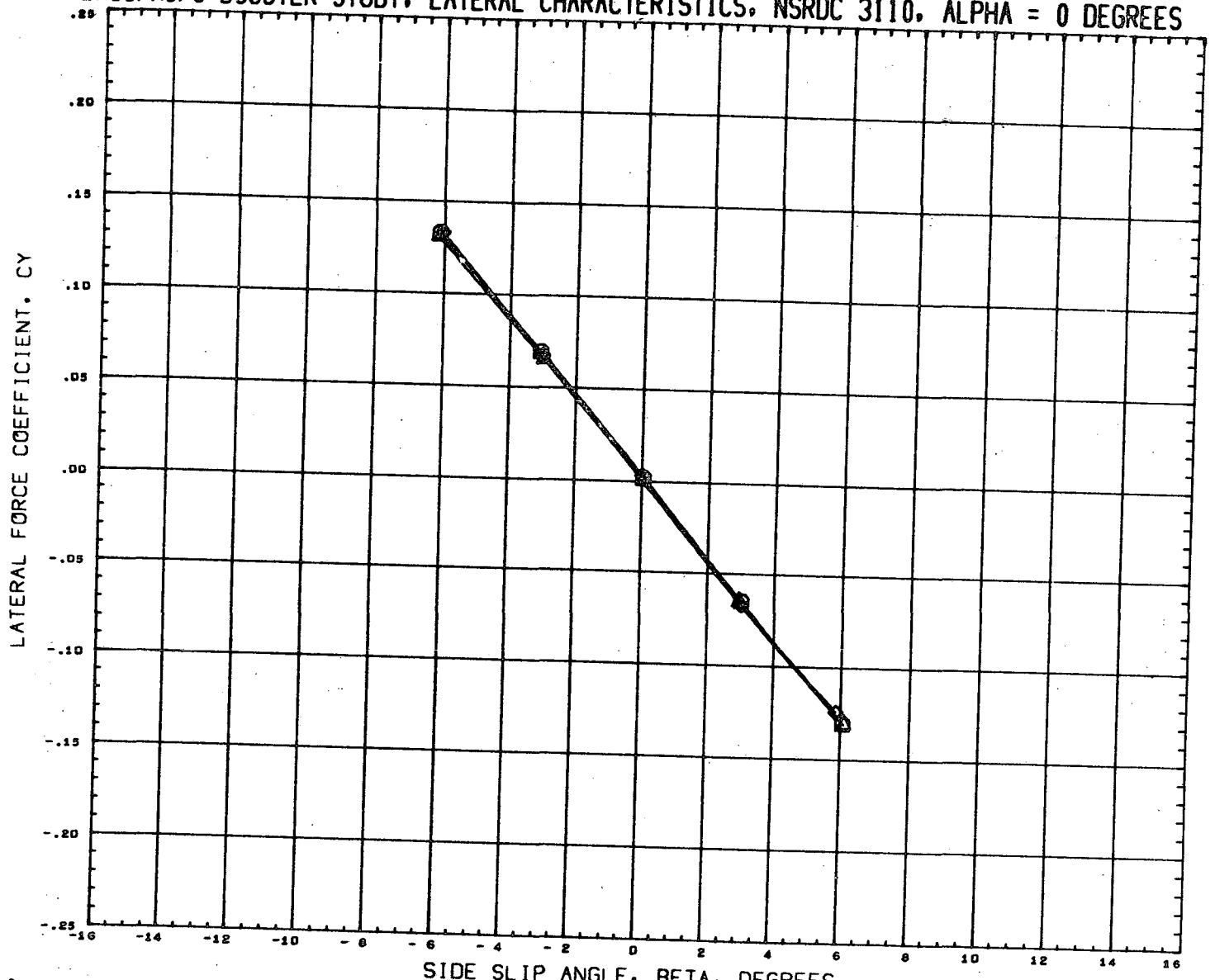
ELEVTR	CANARD	INCIDC	CNDPOS
10.000	0.000	3.000	1.000
10.000	10.000	3.000	1.000
10.000	20.000	3.000	1.000

MACH 0.379

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES



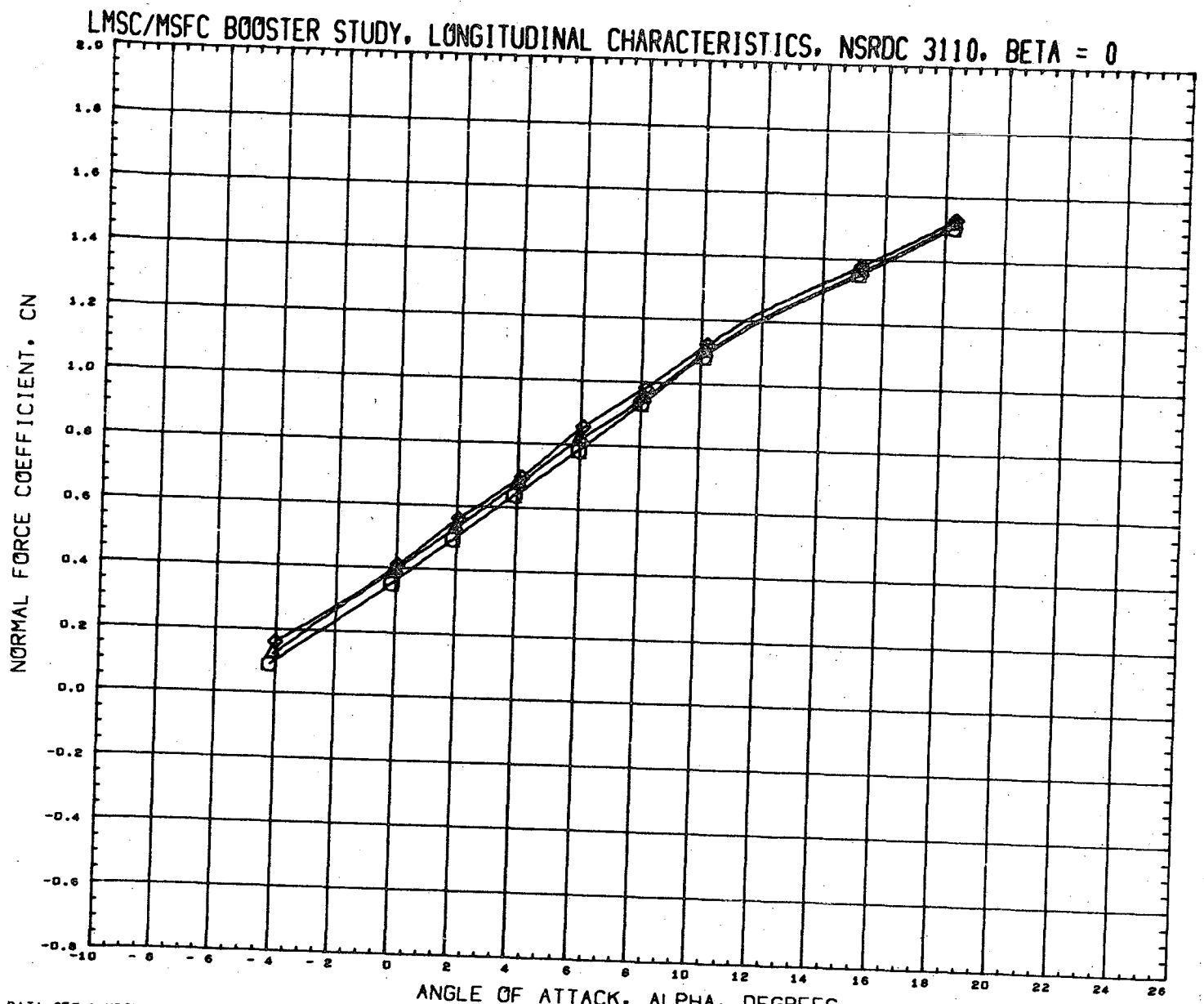
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2354) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2358) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2362) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
10.000	0.000	3.000	1.000
10.000	10.000	3.000	1.000
10.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2365) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2369) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

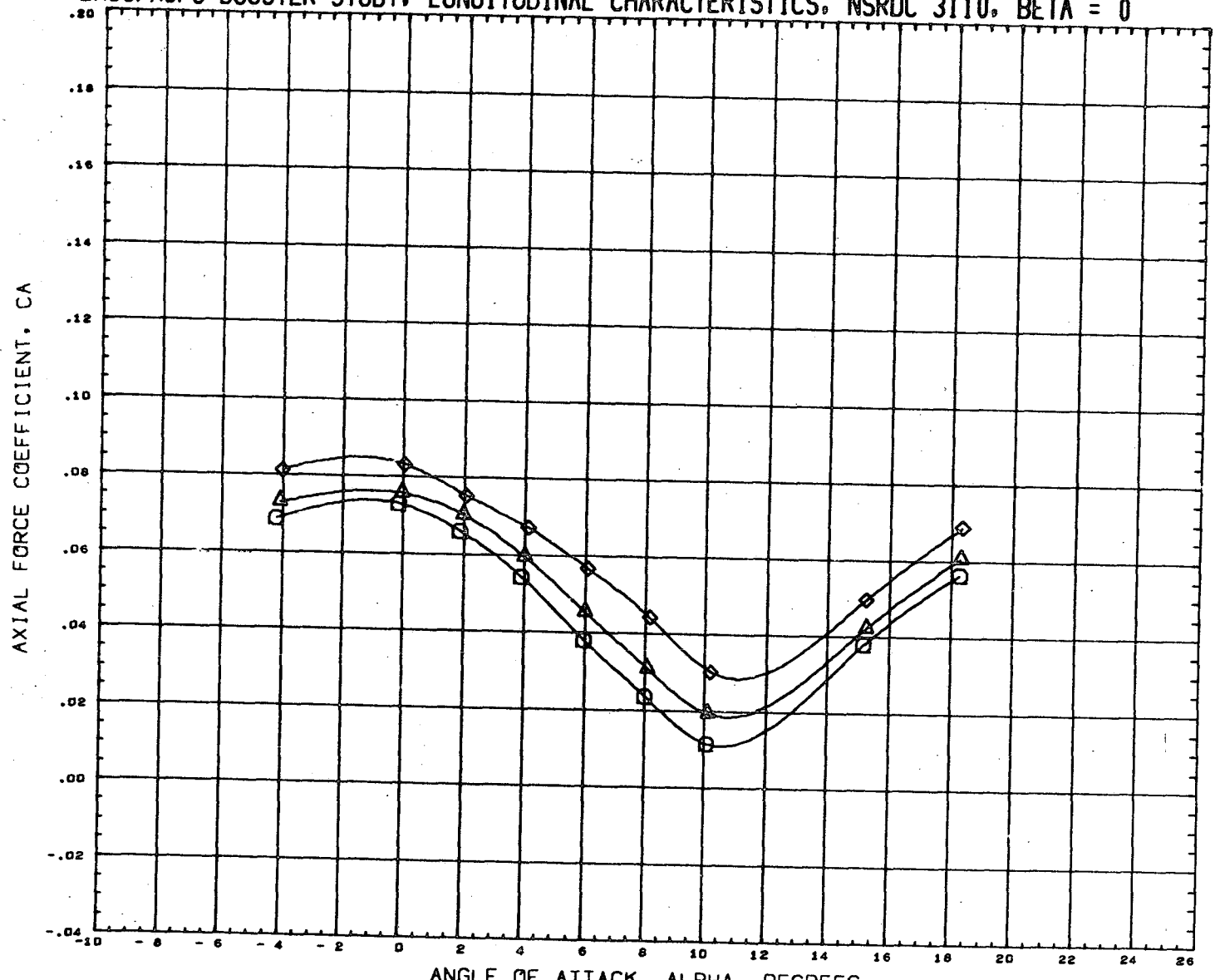
ELEVTR	CANARD	INCIDC	CNDPOS
20.000	0.000	3.000	1.000
20.000	10.000	3.000	1.000
20.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



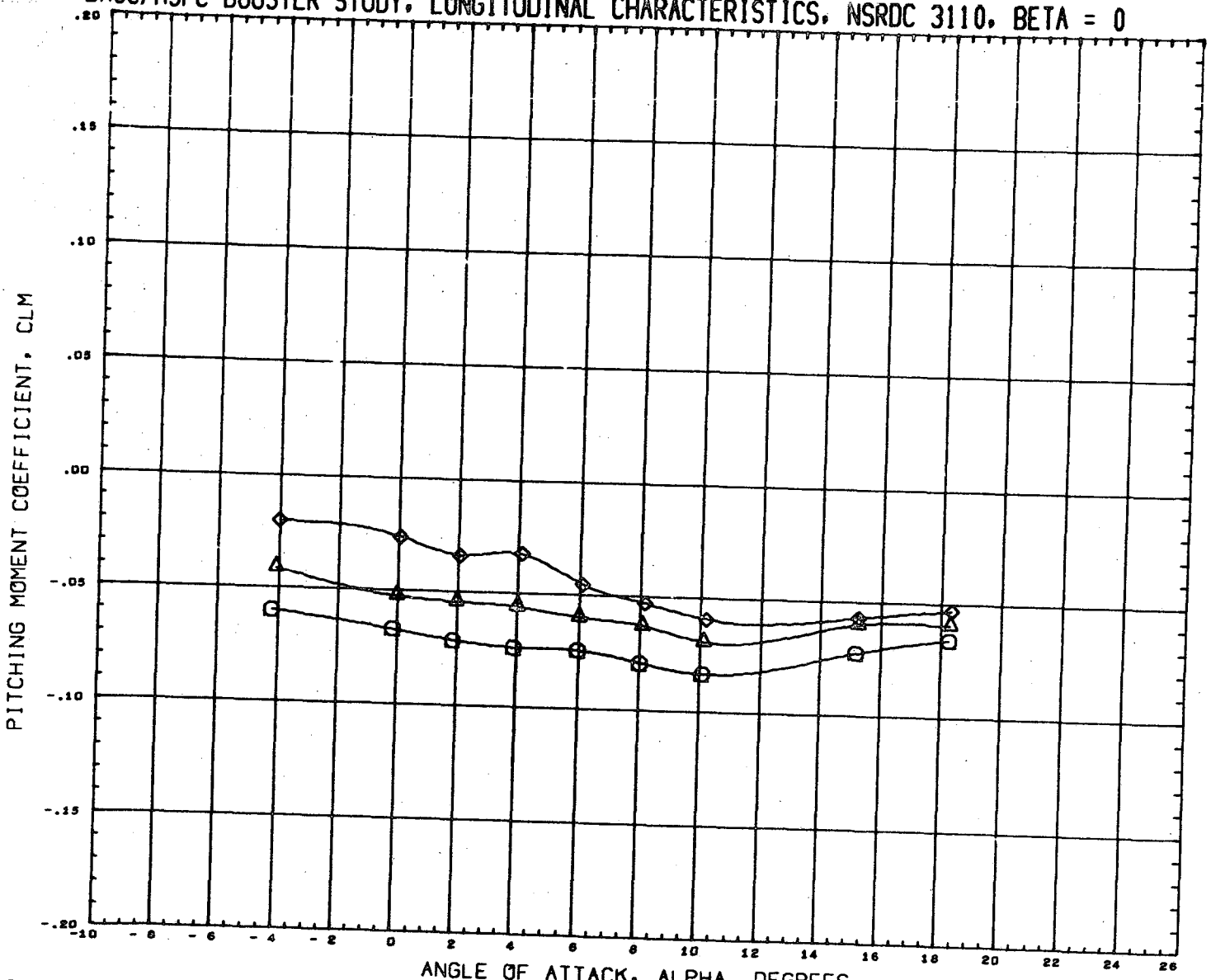
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2365)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2369)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDFOS
20.000	0.000	3.000	1.000
20.000	10.000	3.000	1.000
20.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



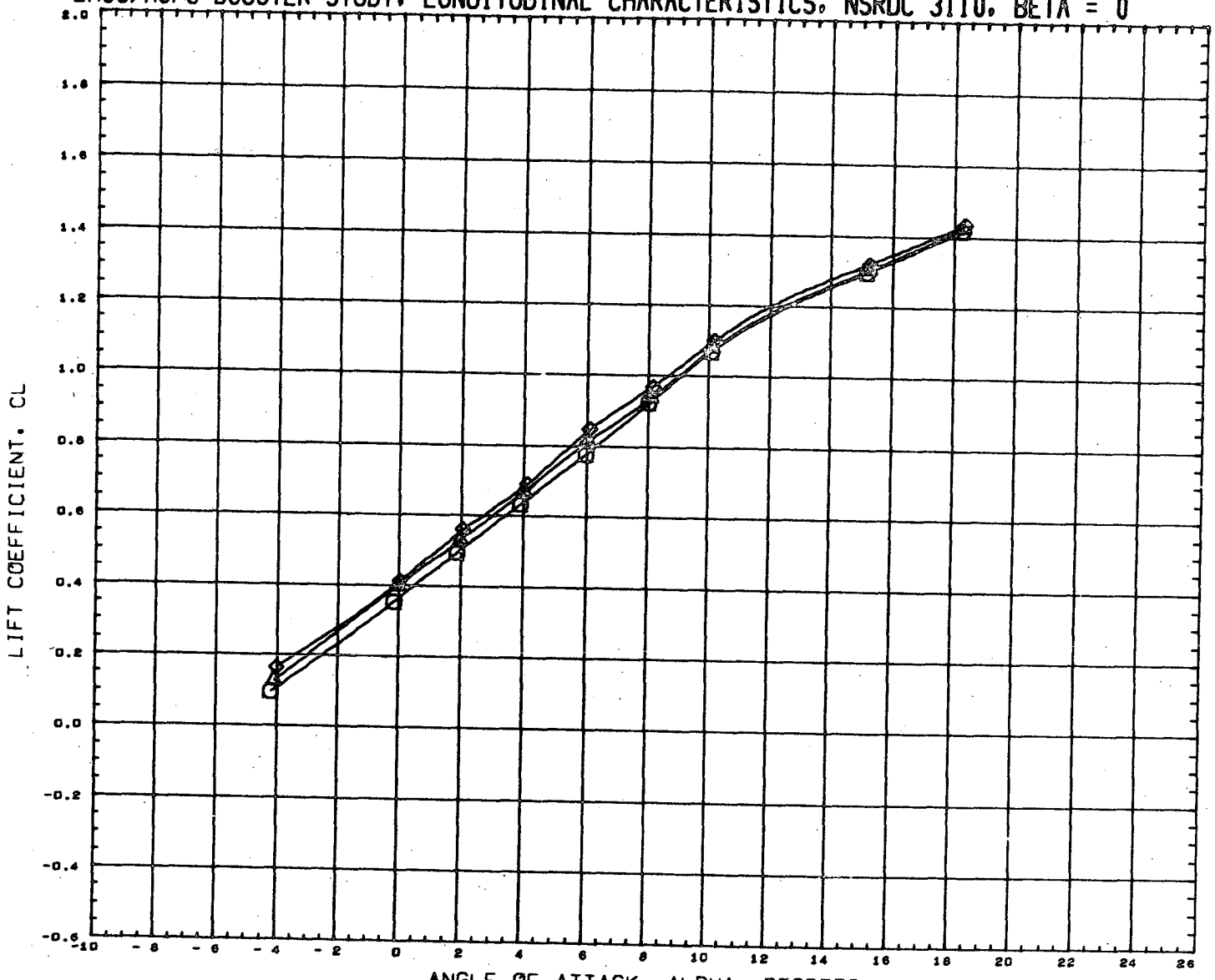
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2365)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2369)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
20.000	0.000	3.000	1.000
20.000	10.000	3.000	1.000
20.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

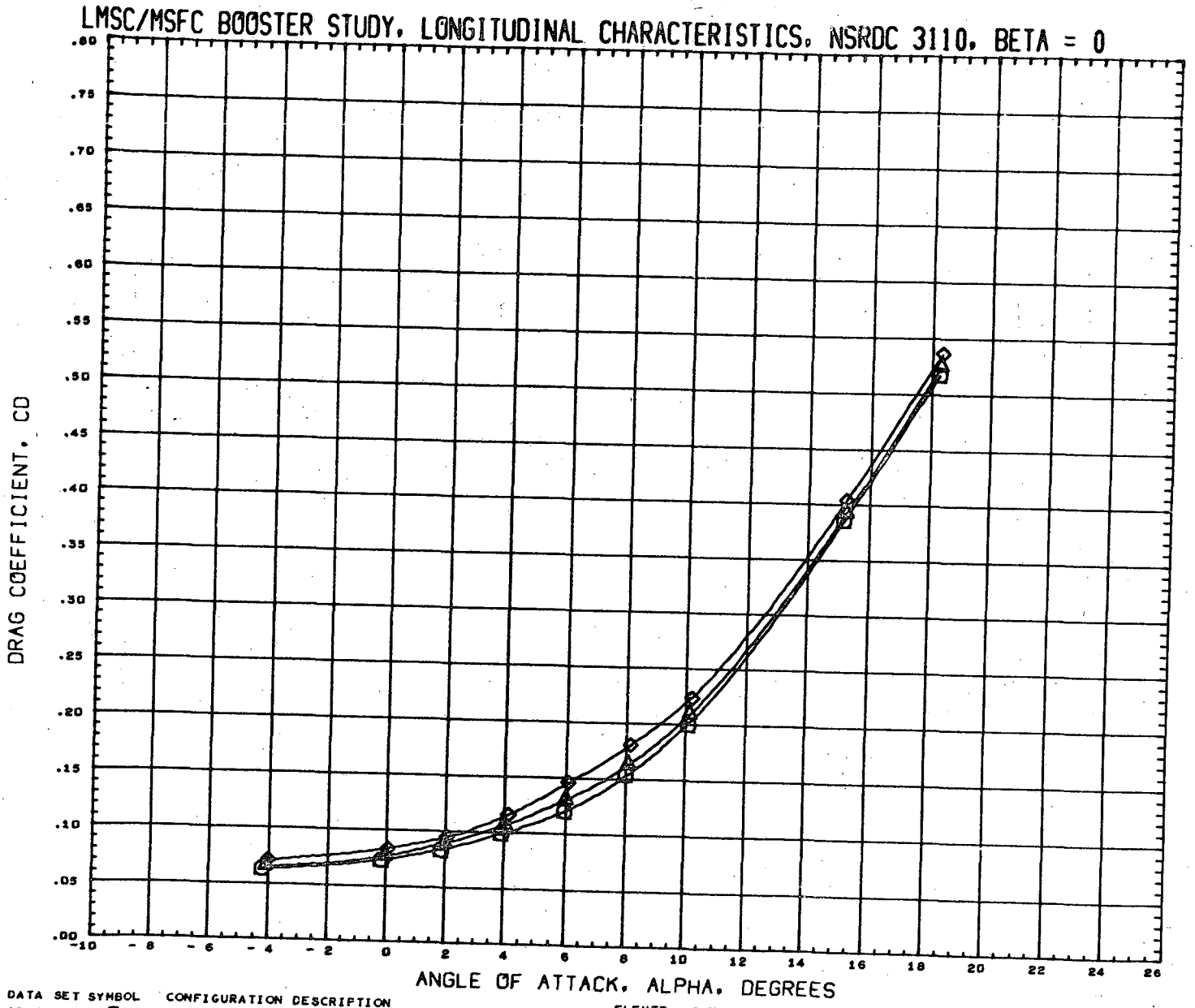


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2365)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2369)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
20.000	0.000	3.000	1.000
20.000	10.000	3.000	1.000
20.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2365)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2369)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

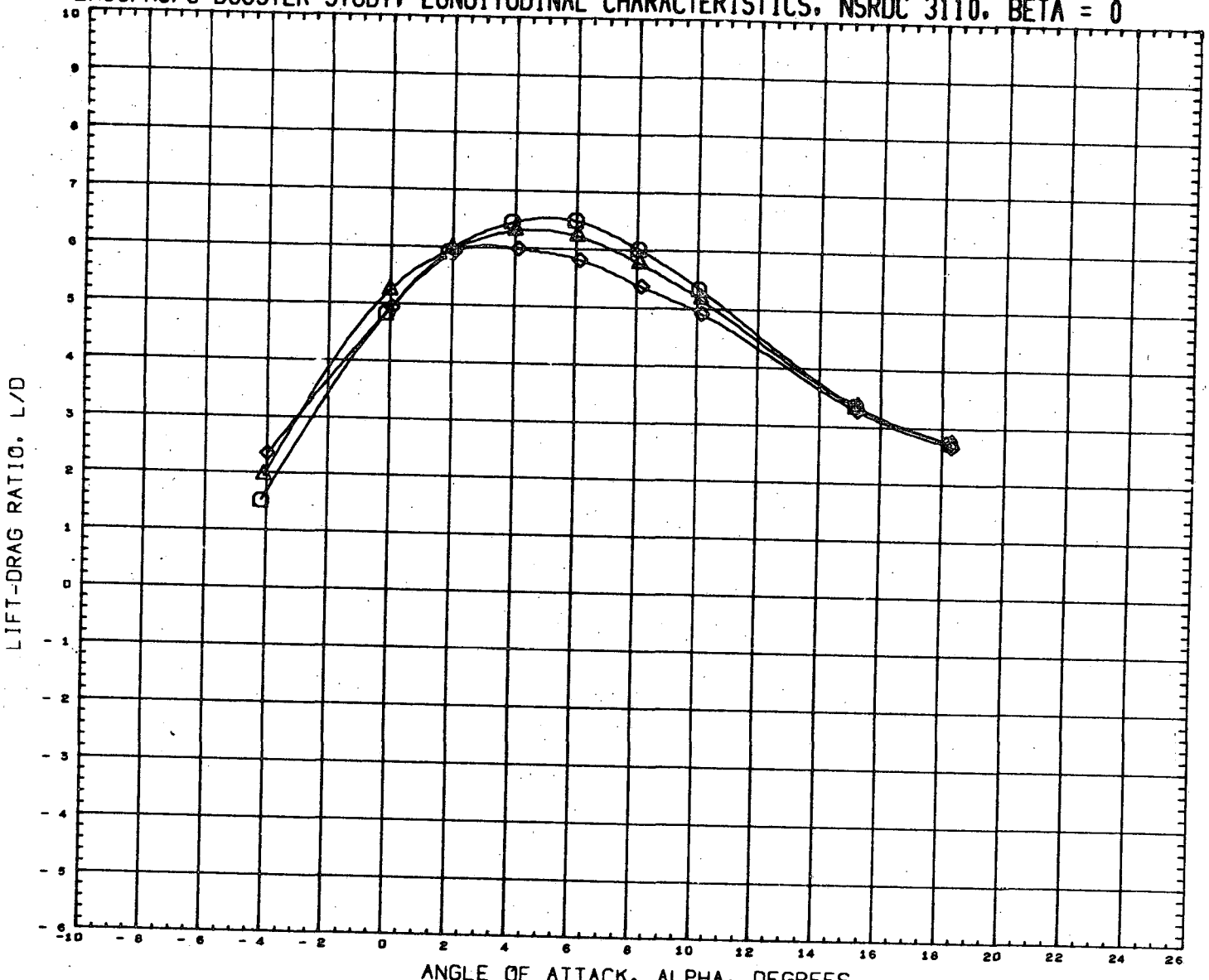
ELEVTR	CANARD	INCIDC	CNDPOS
20.000	0.000	3.000	1.000
20.000	10.000	3.000	1.000
20.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



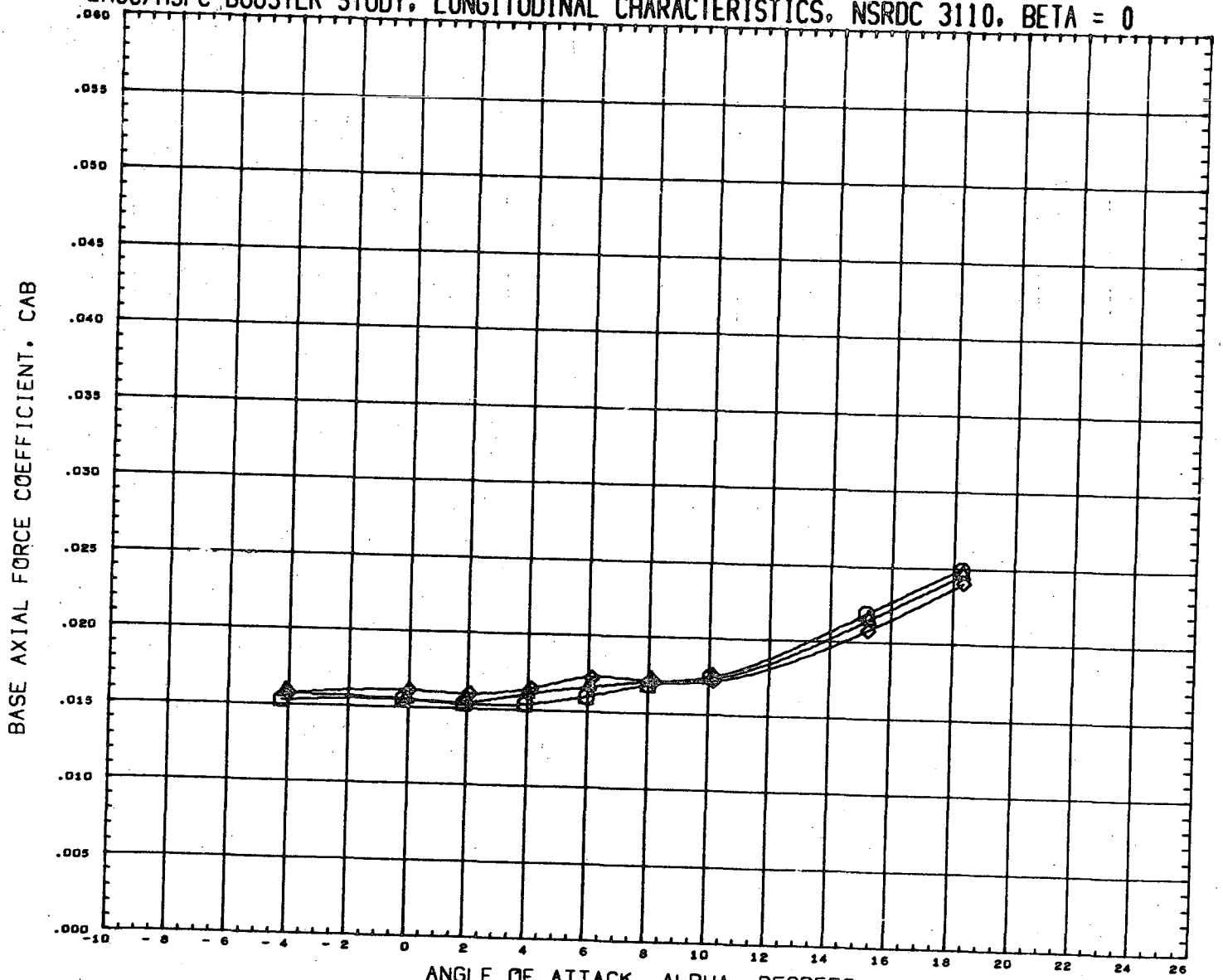
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2365)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2369)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDFOS
20.000	0.000	3.000	1.000
20.000	10.000	3.000	1.000
20.000	20.000	3.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



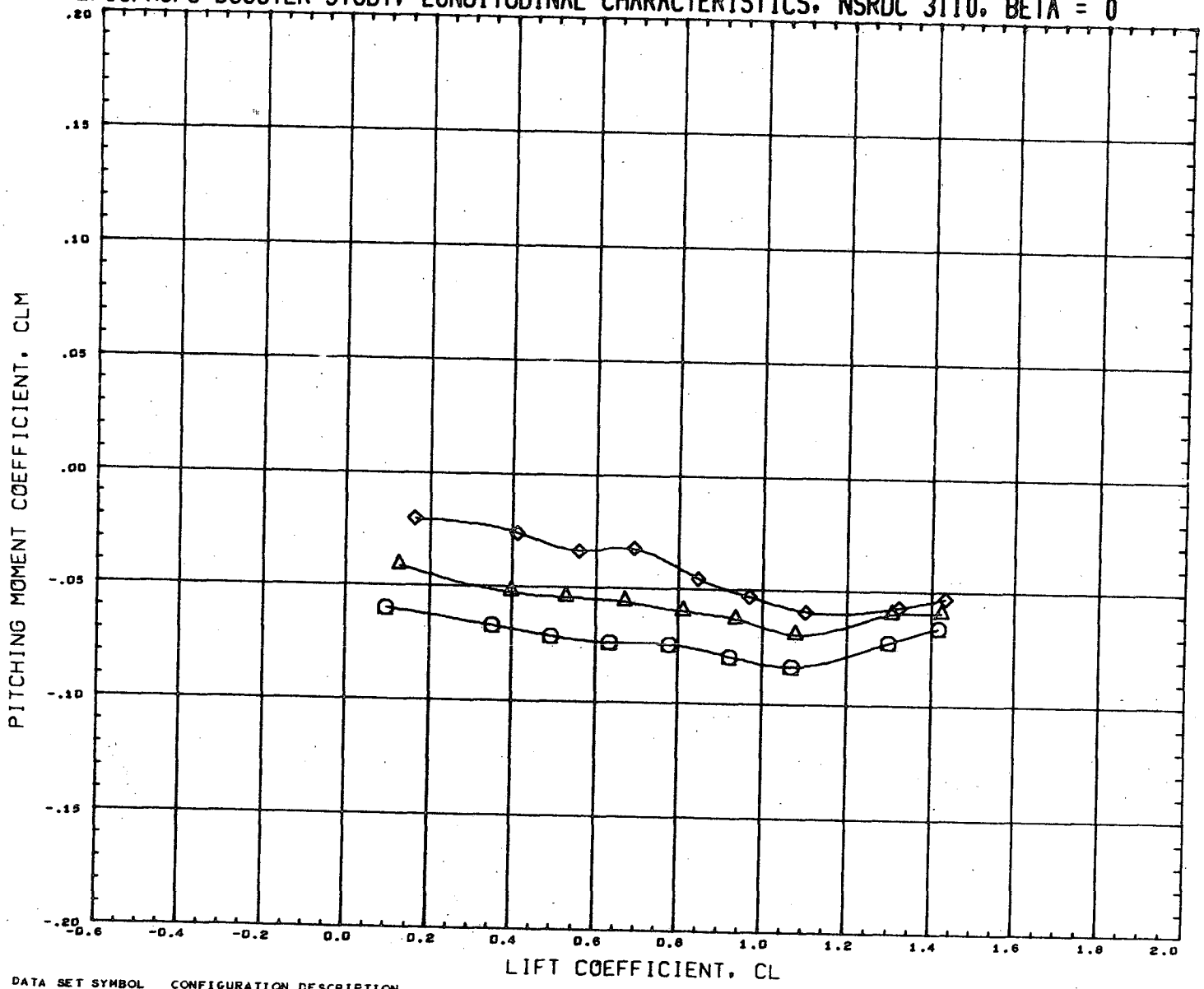
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2365)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2369)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
20.000	0.000	3.000	1.000
20.000	10.000	3.000	1.000
20.000	20.000	3.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



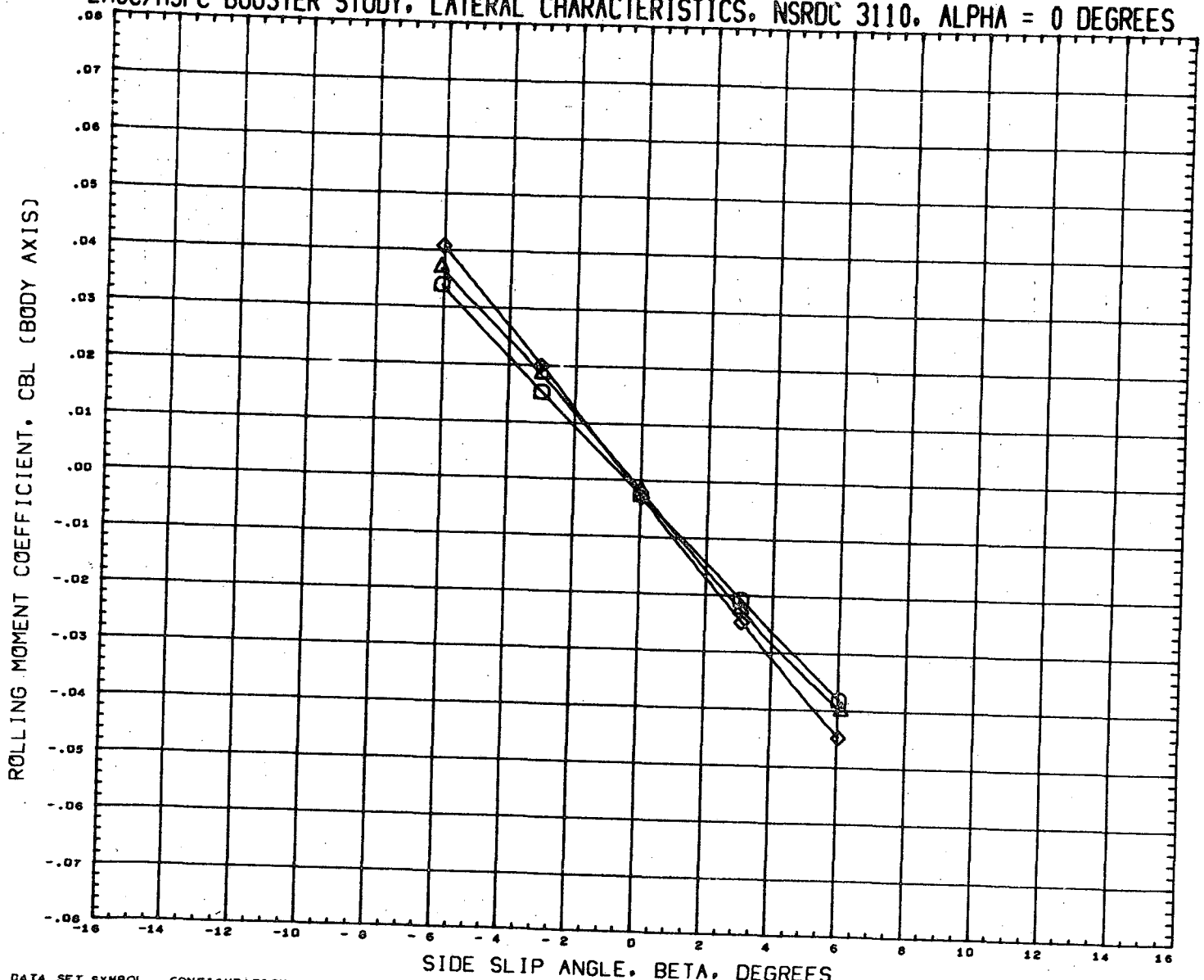
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2365)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2369)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2373)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
20.000	0.000	3.000	1.000
20.000	10.000	3.000	1.000
20.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2366) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2370) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2374) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

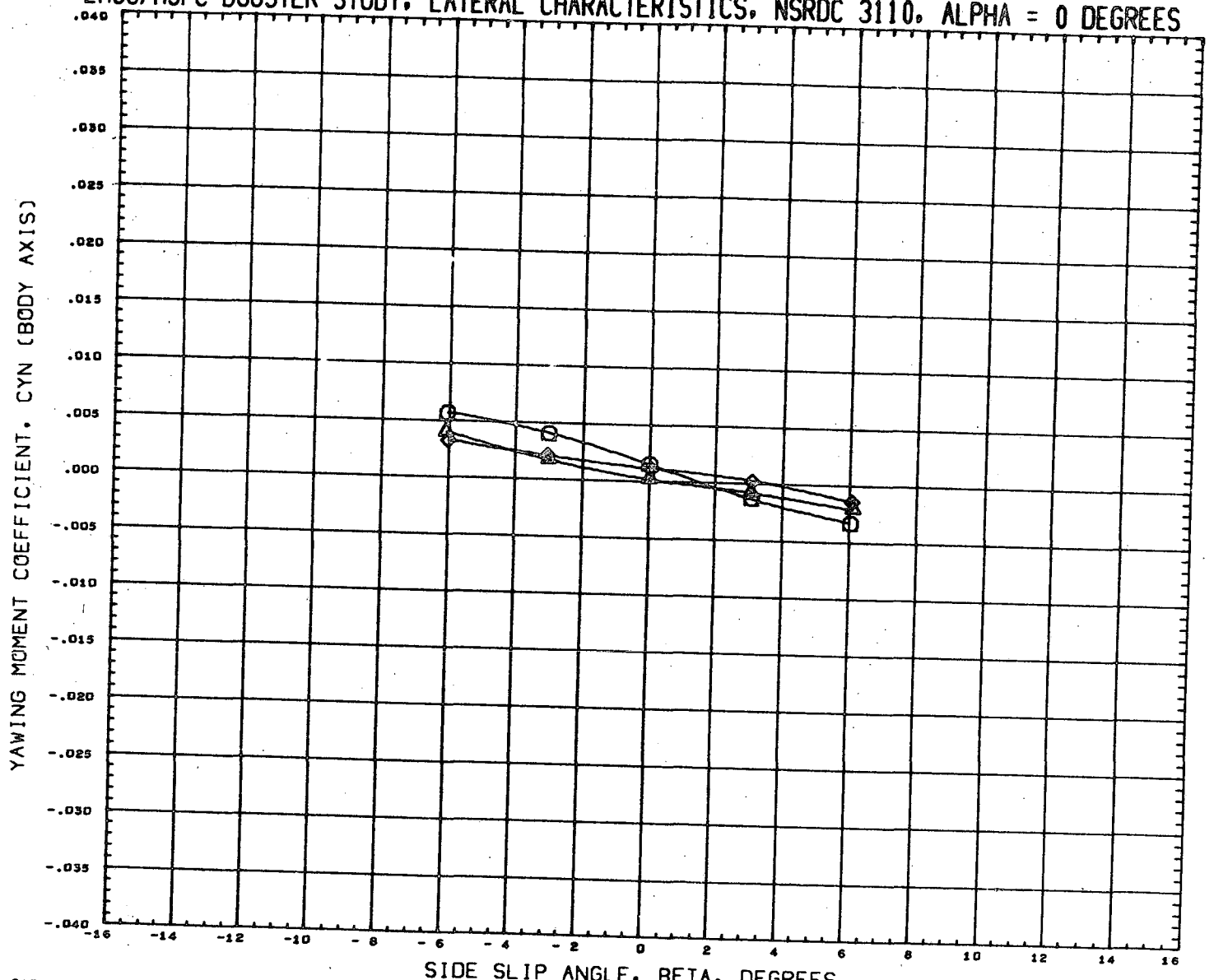
ELEVTR	CANARD	INCIDC	CNDPOS
20.000	0.000	3.000	1.000
20.000	10.000	3.000	1.000
20.000	20.000	3.000	1.000

MACH 0.379

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



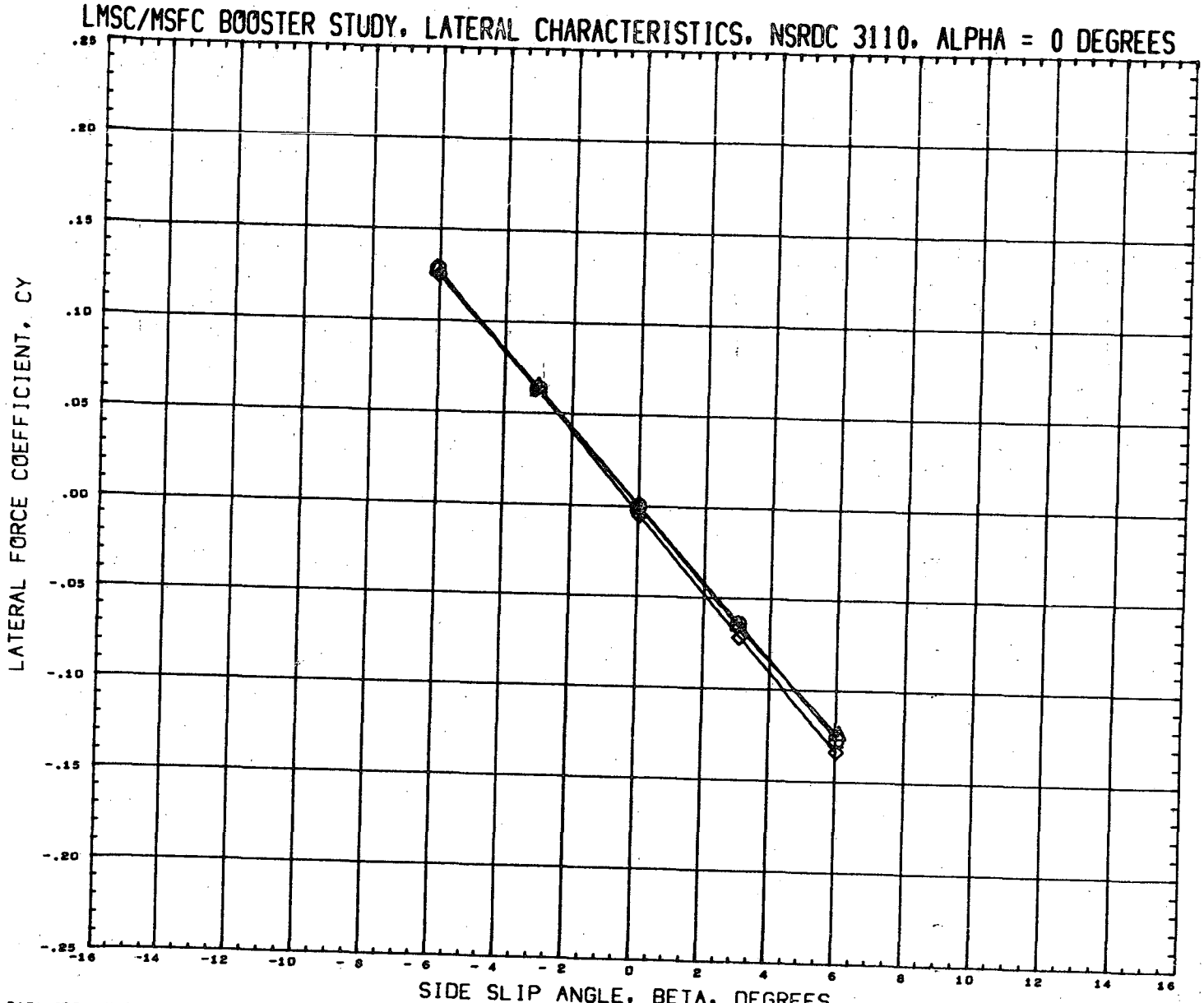
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2366) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2370) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2374) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
20.000	0.000	3.000	1.000
20.000	10.000	3.000	1.000
20.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379



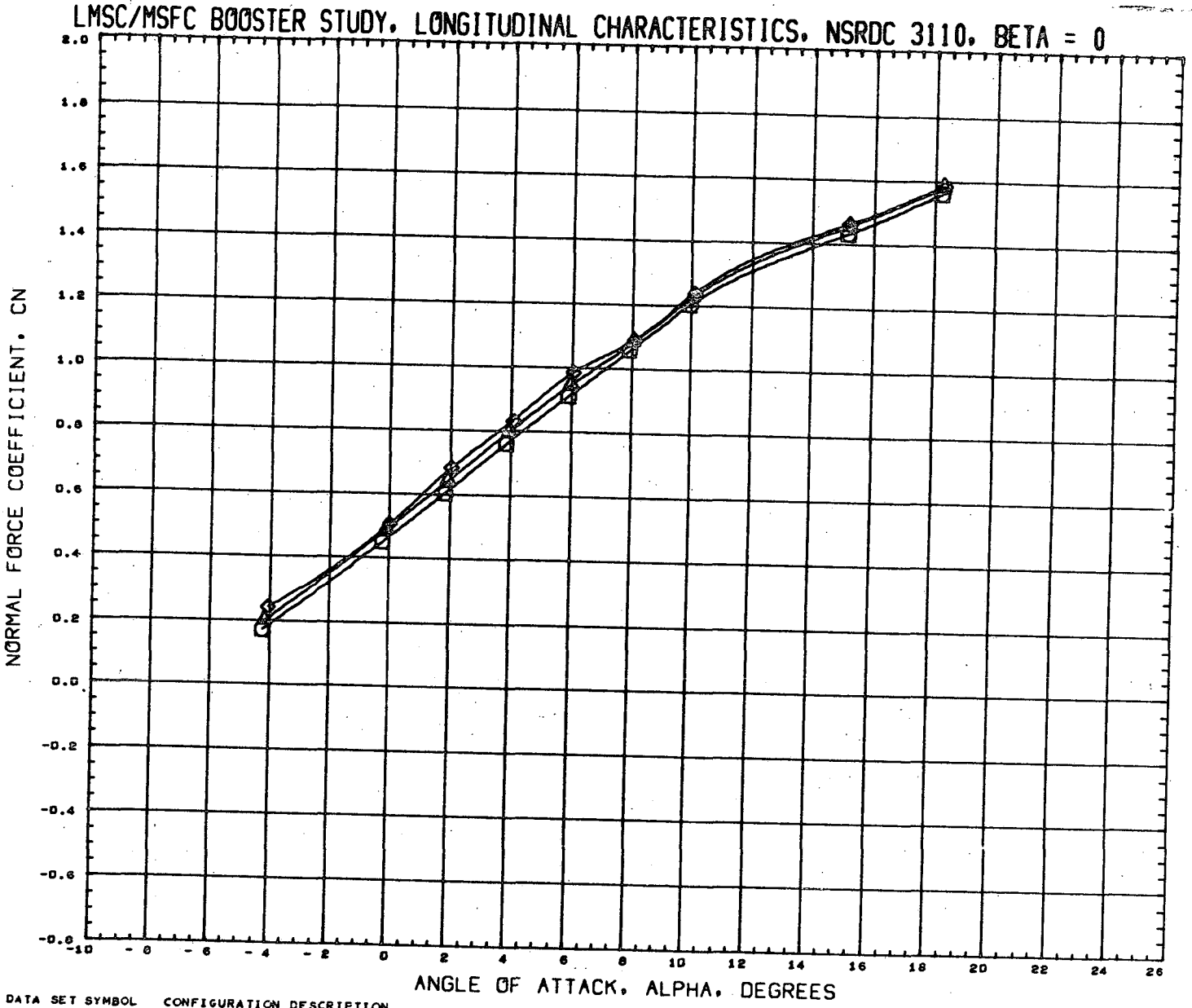
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2366)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2370)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2374)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.379

ELEVTR	CANARD	INCIDC	CNDPOS
20.000	0.000	3.000	1.000
20.000	10.000	3.000	1.000
20.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



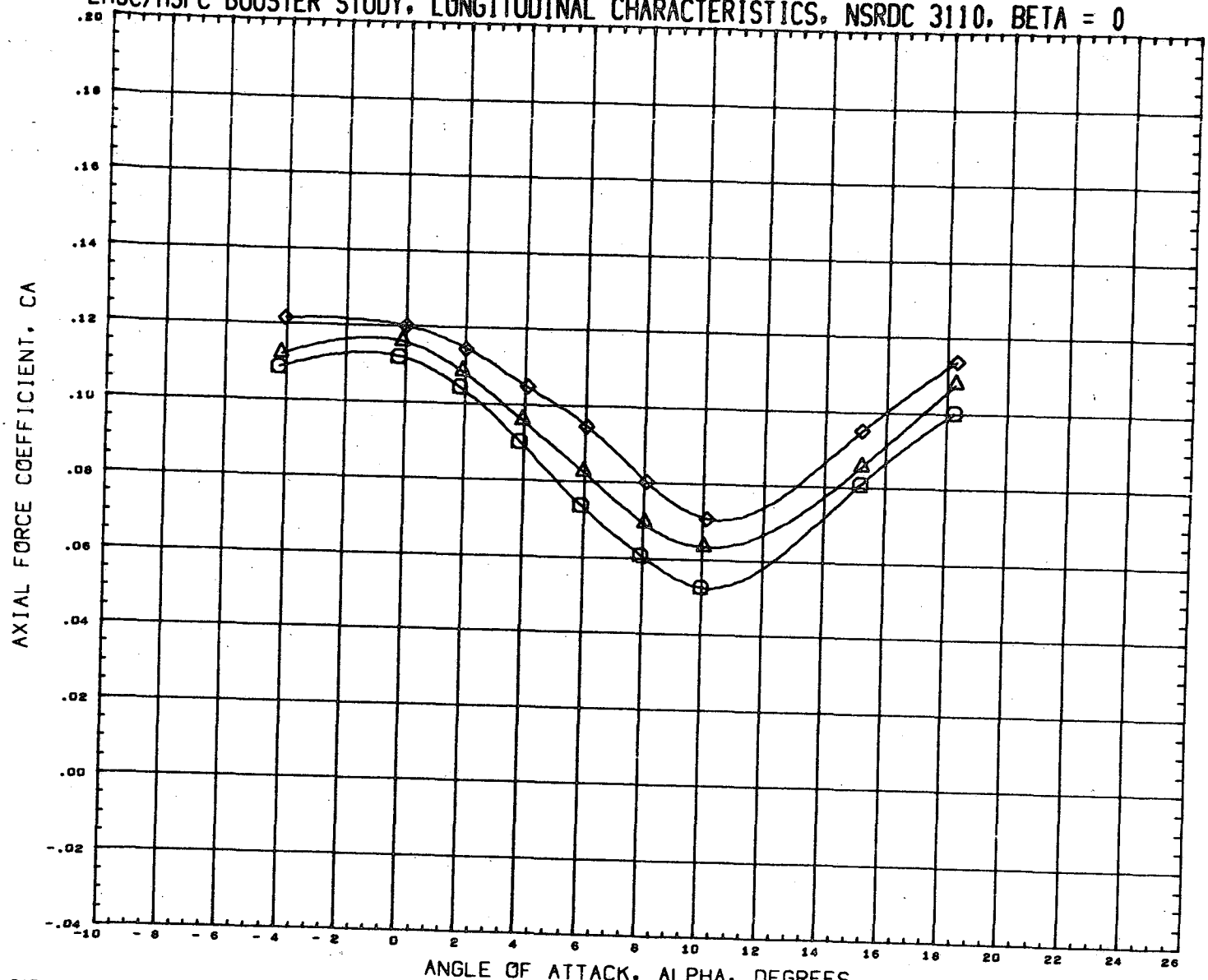
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVTR	CANARD	INCIDC	CNDPOS
(RN2377) □	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	30.000	0.000	3.000	1.000
(RN2381) ⊠	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	30.000	10.000	3.000	1.000
(RN2385) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	30.000	20.000	3.000	1.000

MACH 0.383

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2377)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2381)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2385)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

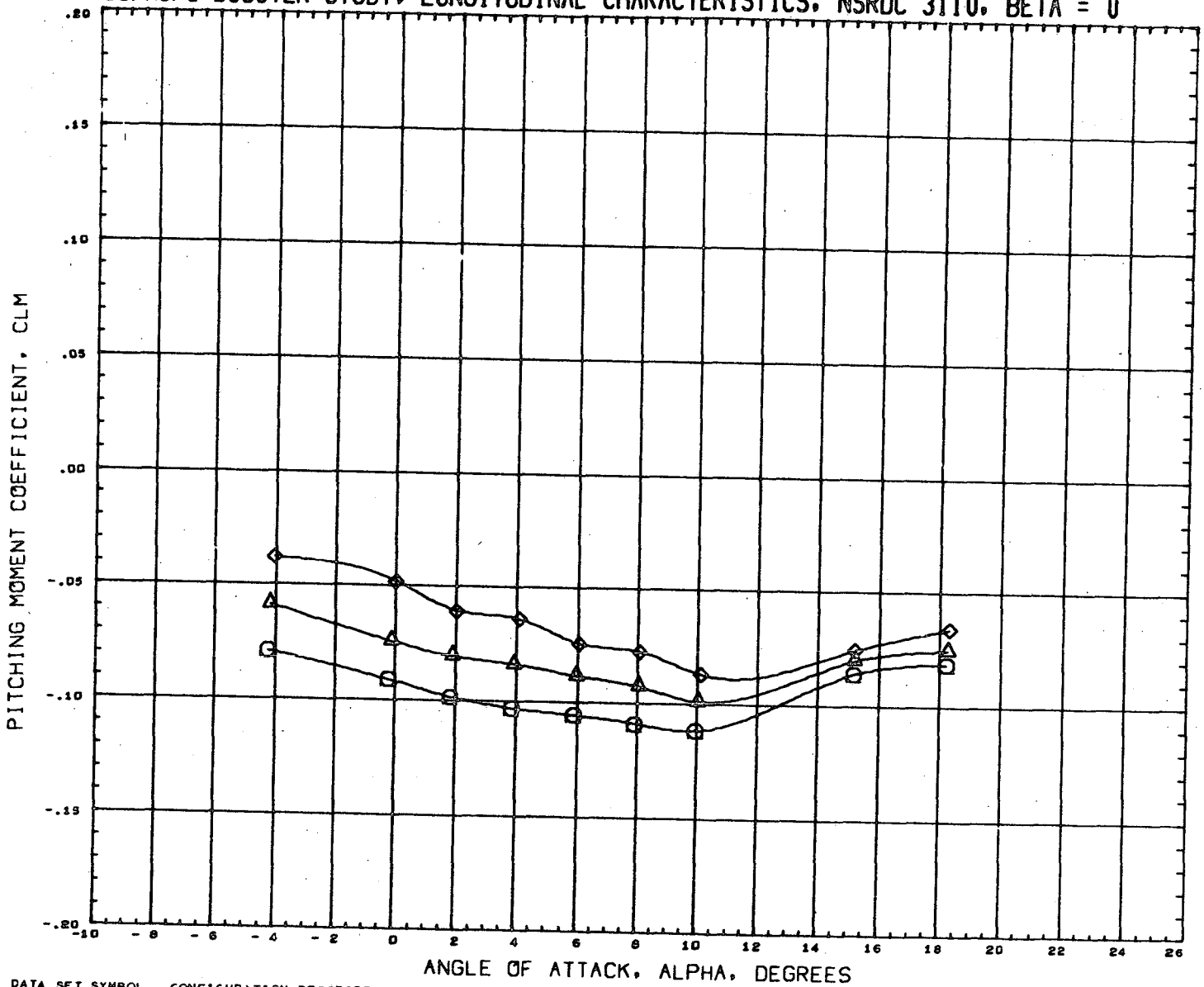
ELEVTR	CANARD	INCIDC	CNDPOS
30.000	0.000	3.000	1.000
30.000	10.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.383

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

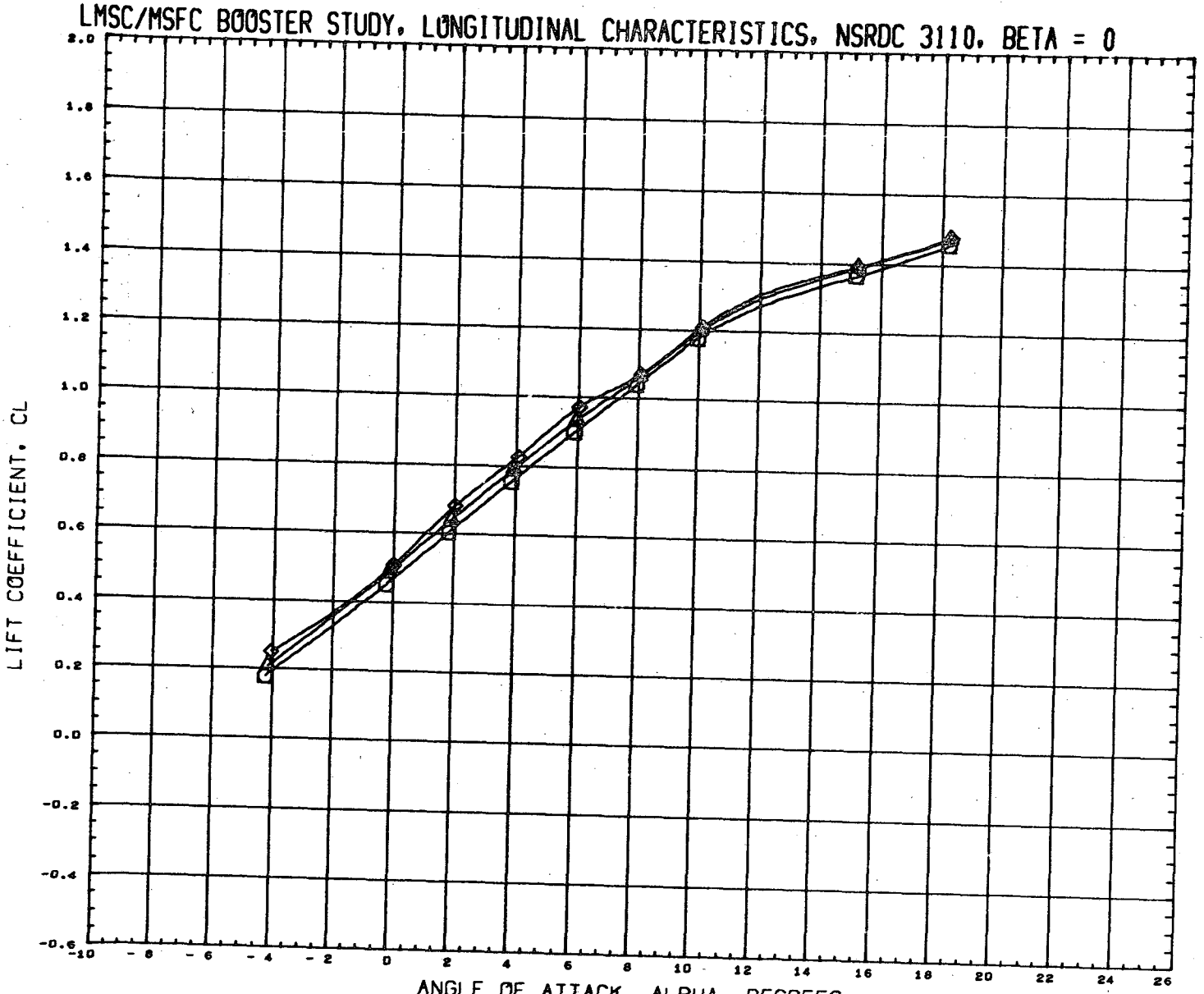


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVTR	CANARD	INCIDC	CNDPOS
(RN2377)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	30.000	0.000	3.000	1.000
(RN2381)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	30.000	10.000	3.000	1.000
(RN2385)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	30.000	20.000	3.000	1.000

MACH 0.383

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2377)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2381)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2385)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

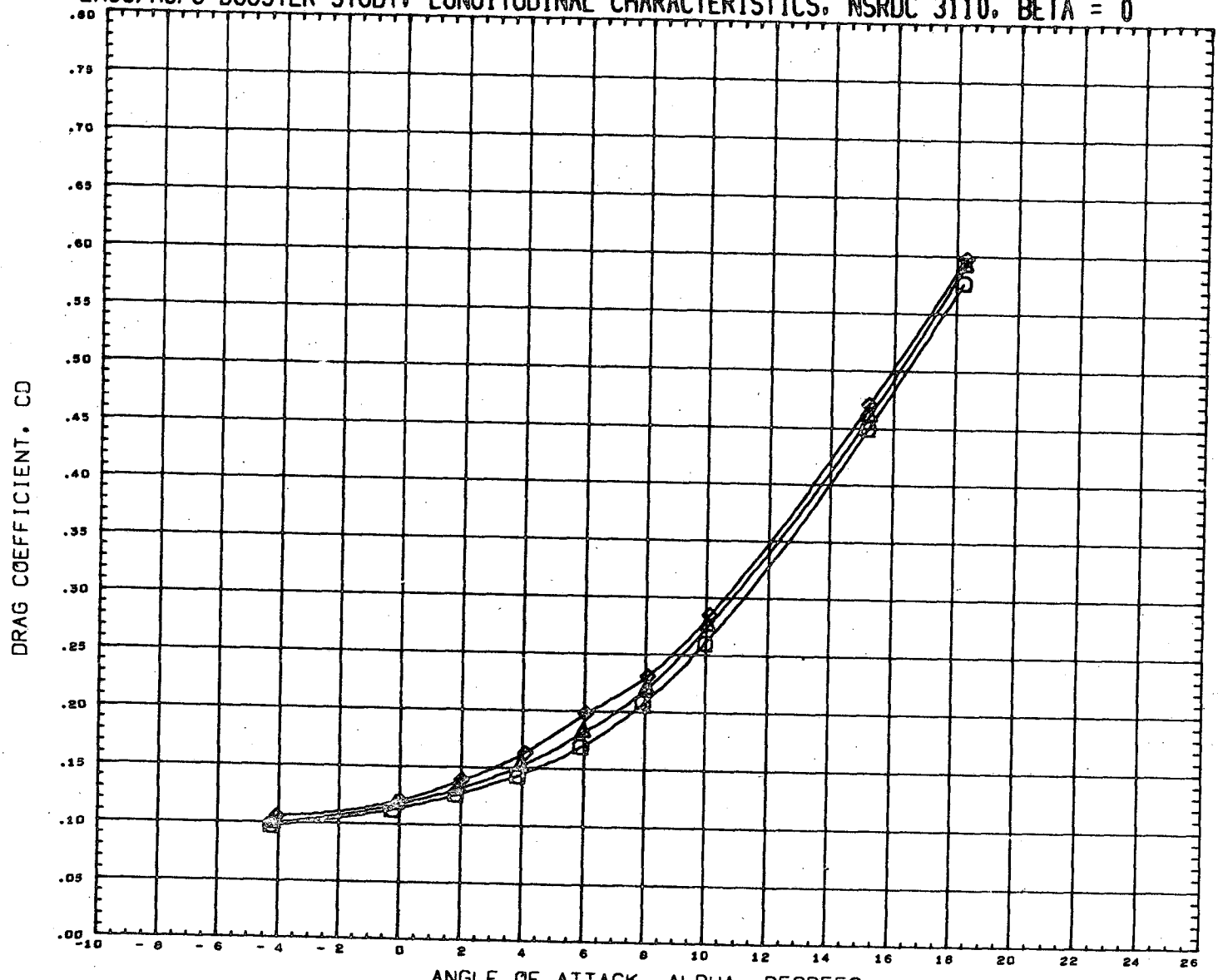
ELEVTR	CANARD	INCIDC	CNDPOS
30.000	0.000	3.000	1.000
30.000	10.000	3.000	1.000
30.000	20.000	3.000	1.000

MACH 0.383

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



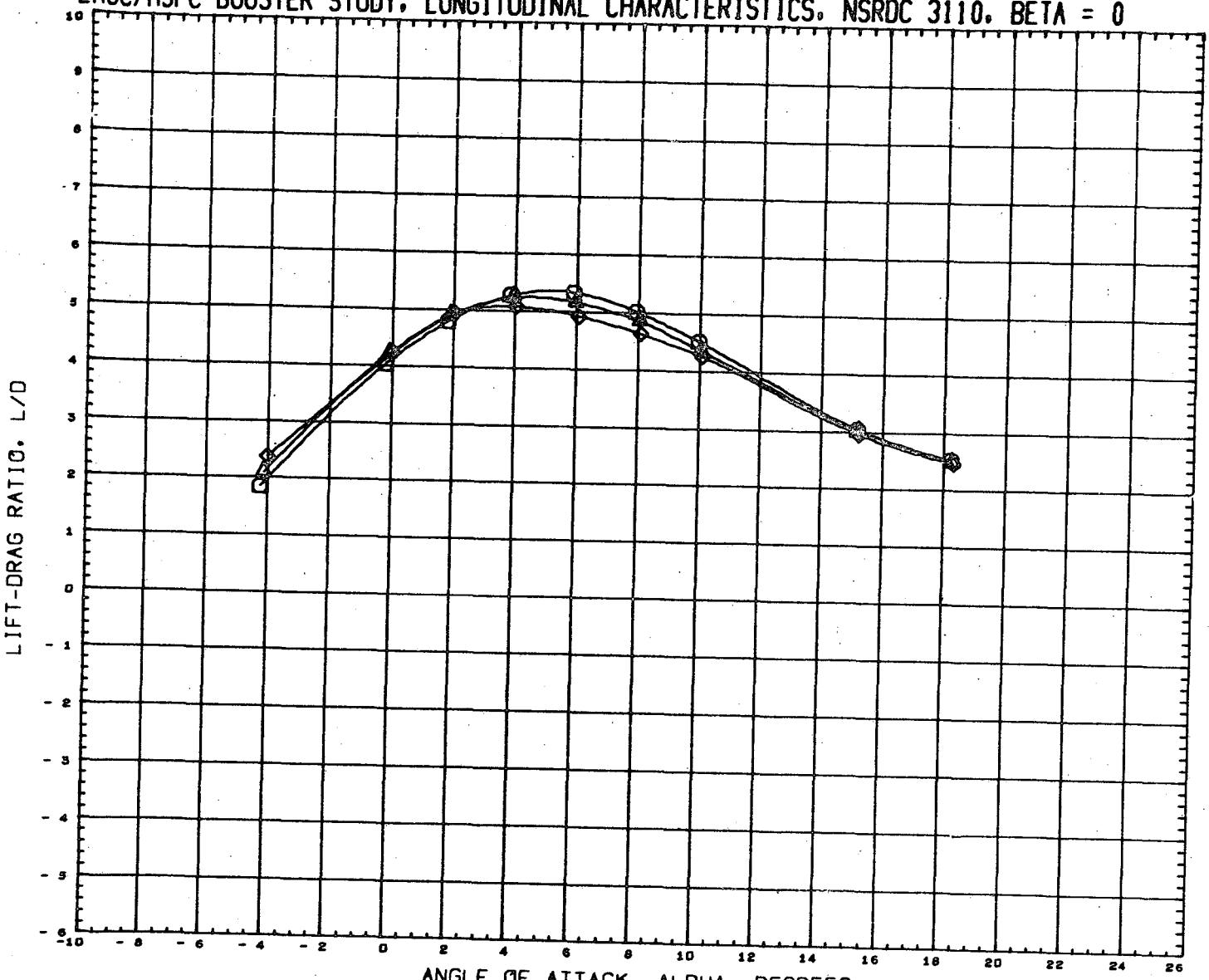
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2377)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2381)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2385)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
30.000	0.000	3.000	1.000
30.000	10.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.383

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2377) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2381) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2385) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

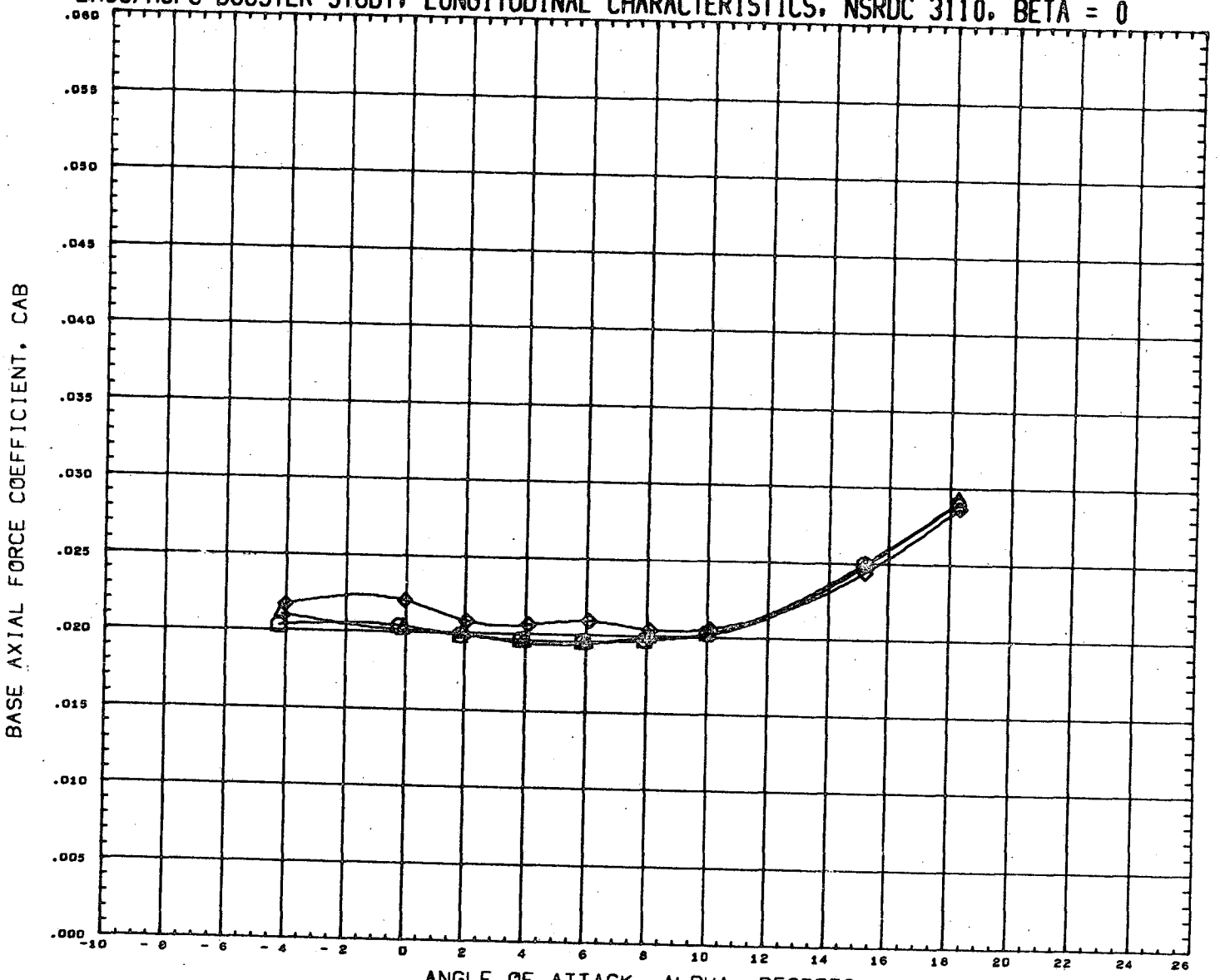
MACH 0.383

ELEVTR	CANARD	INCIDC	CNDPOS
30.000	0.000	3.000	1.000
30.000	10.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



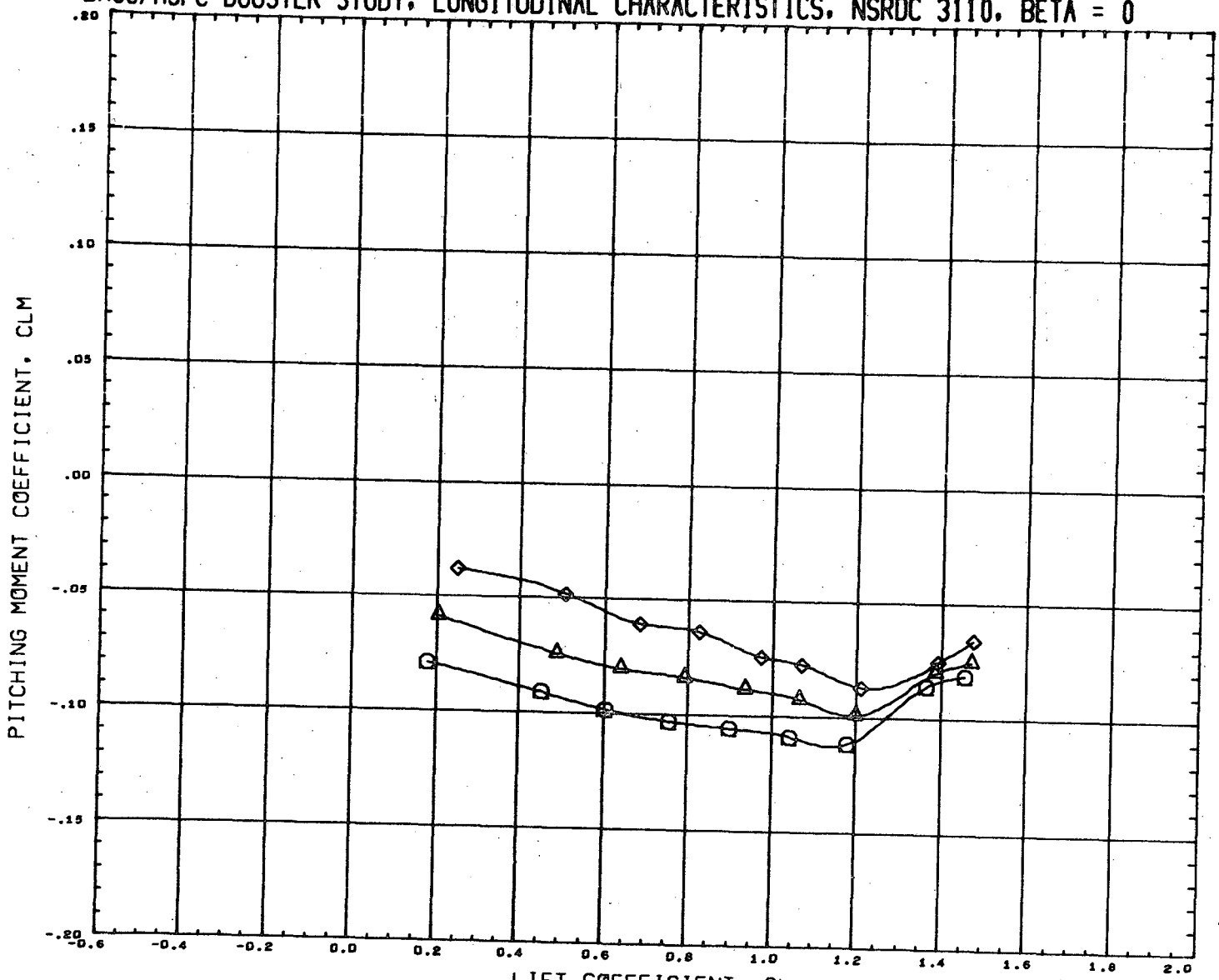
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2377)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2381)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2365)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
30.000	0.000	3.000	1.000
30.000	10.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.383

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2377) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2381) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2385) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

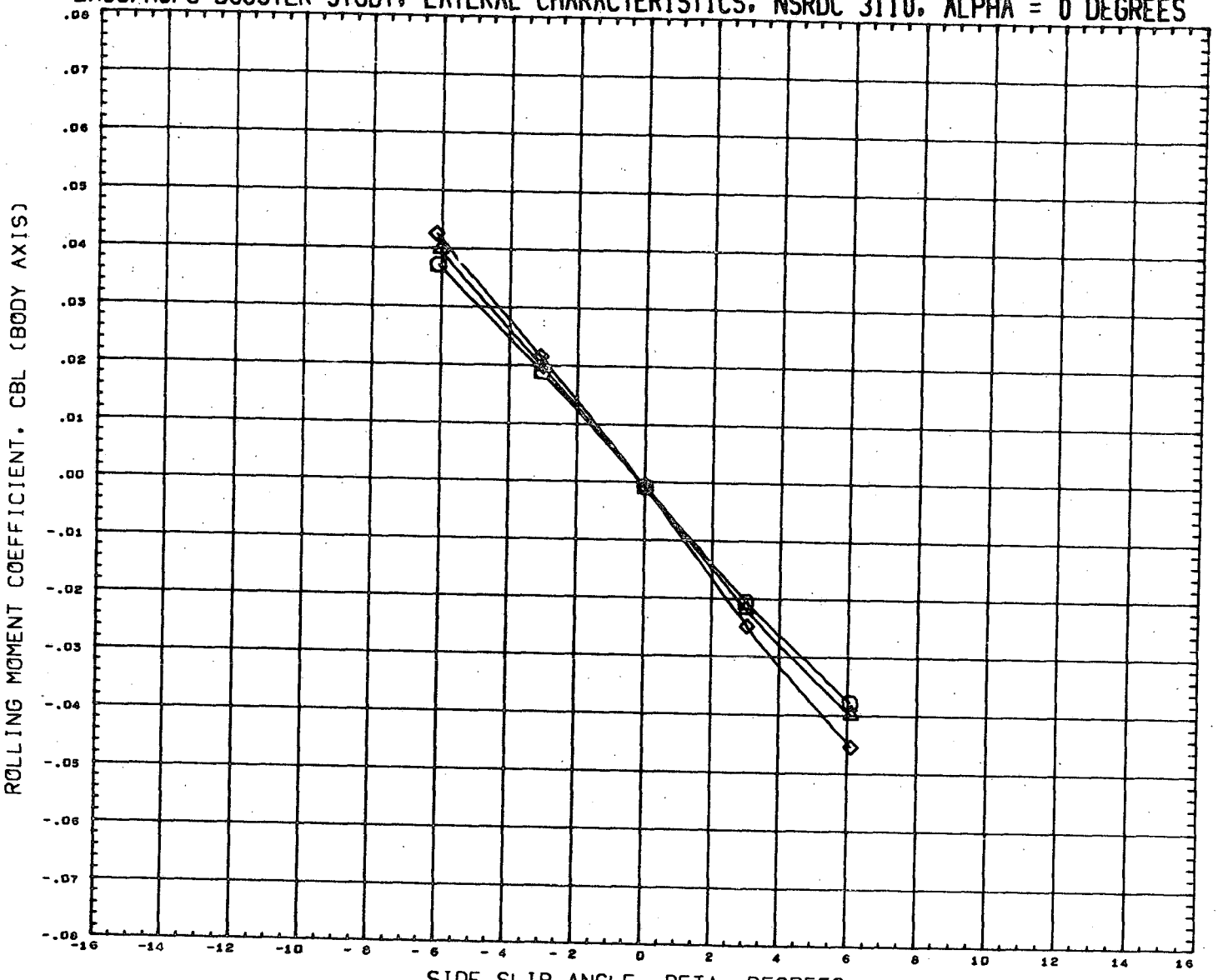
ELEVTR	CANARD	INCIDC	CNDPOS
30.000	0.000	3.000	1.000
30.000	10.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.363

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



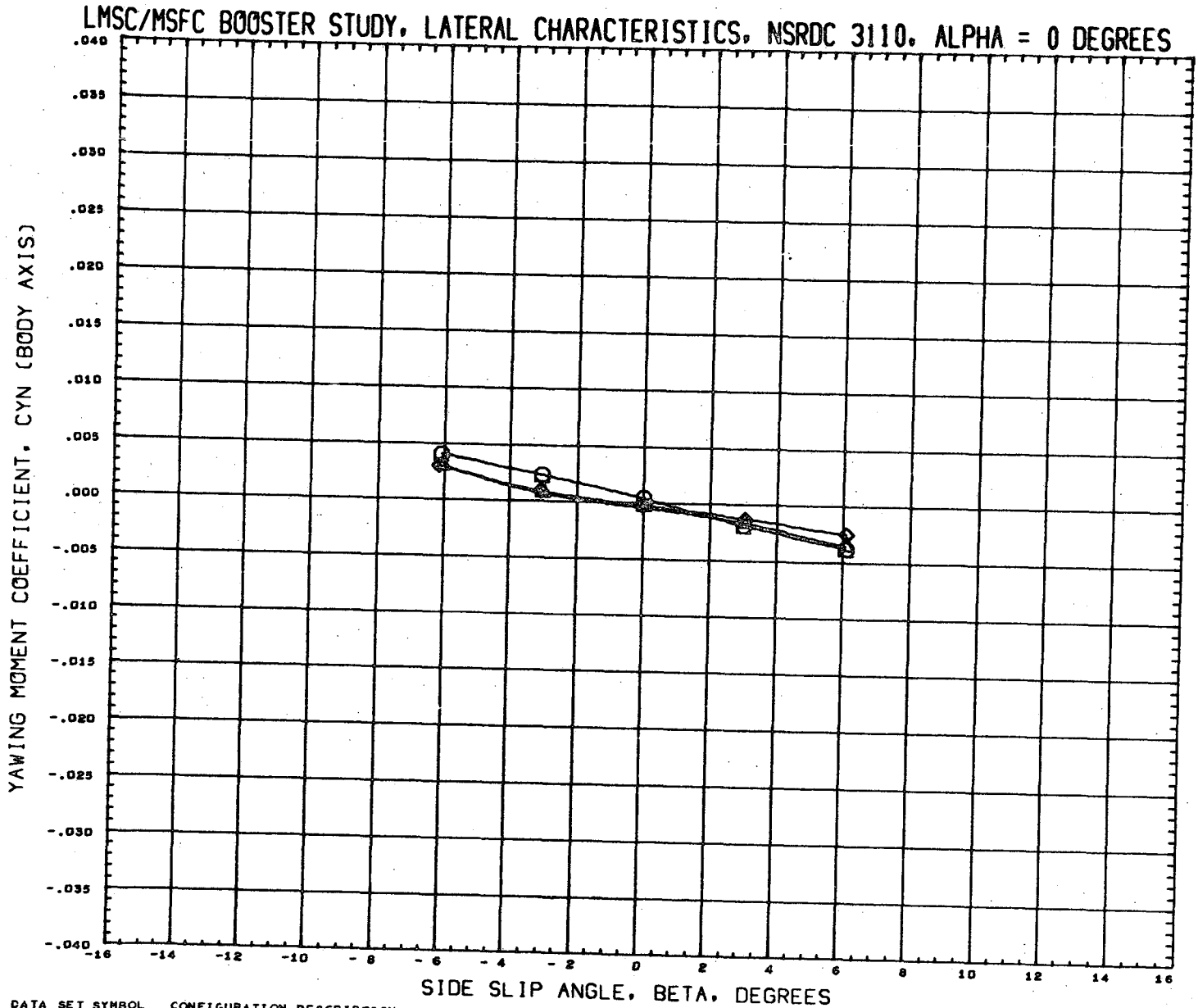
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2378)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2382)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2386)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
30.000	0.000	3.000	1.000
30.000	10.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.380



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2378)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2382)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2386)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

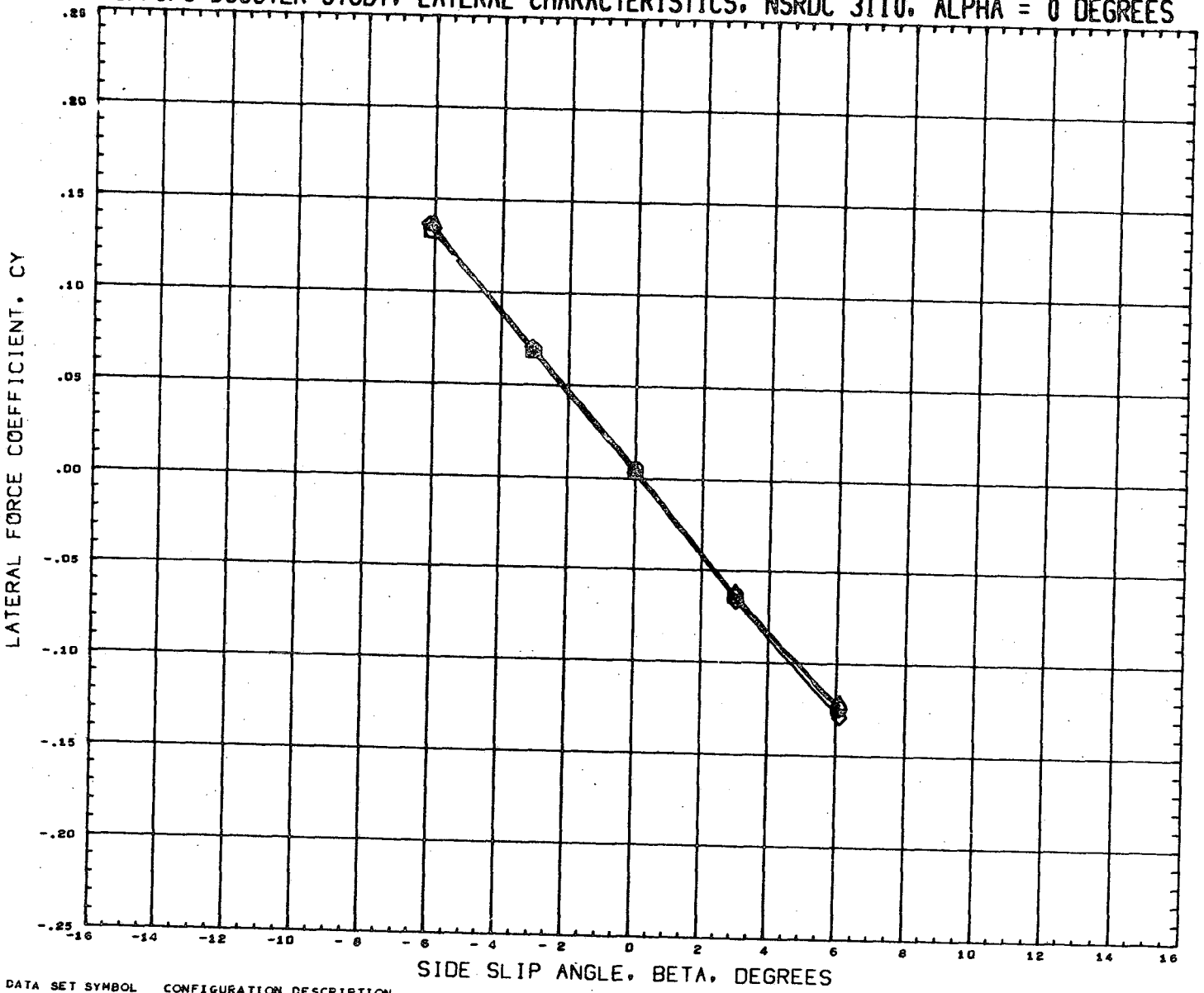
ELEVTR	CANARD	INCIDC	CNDPOS
30.000	0.000	3.000	1.000
30.000	10.000	3.000	1.000
30.000	20.000	3.000	1.000

MACH 0.380

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES

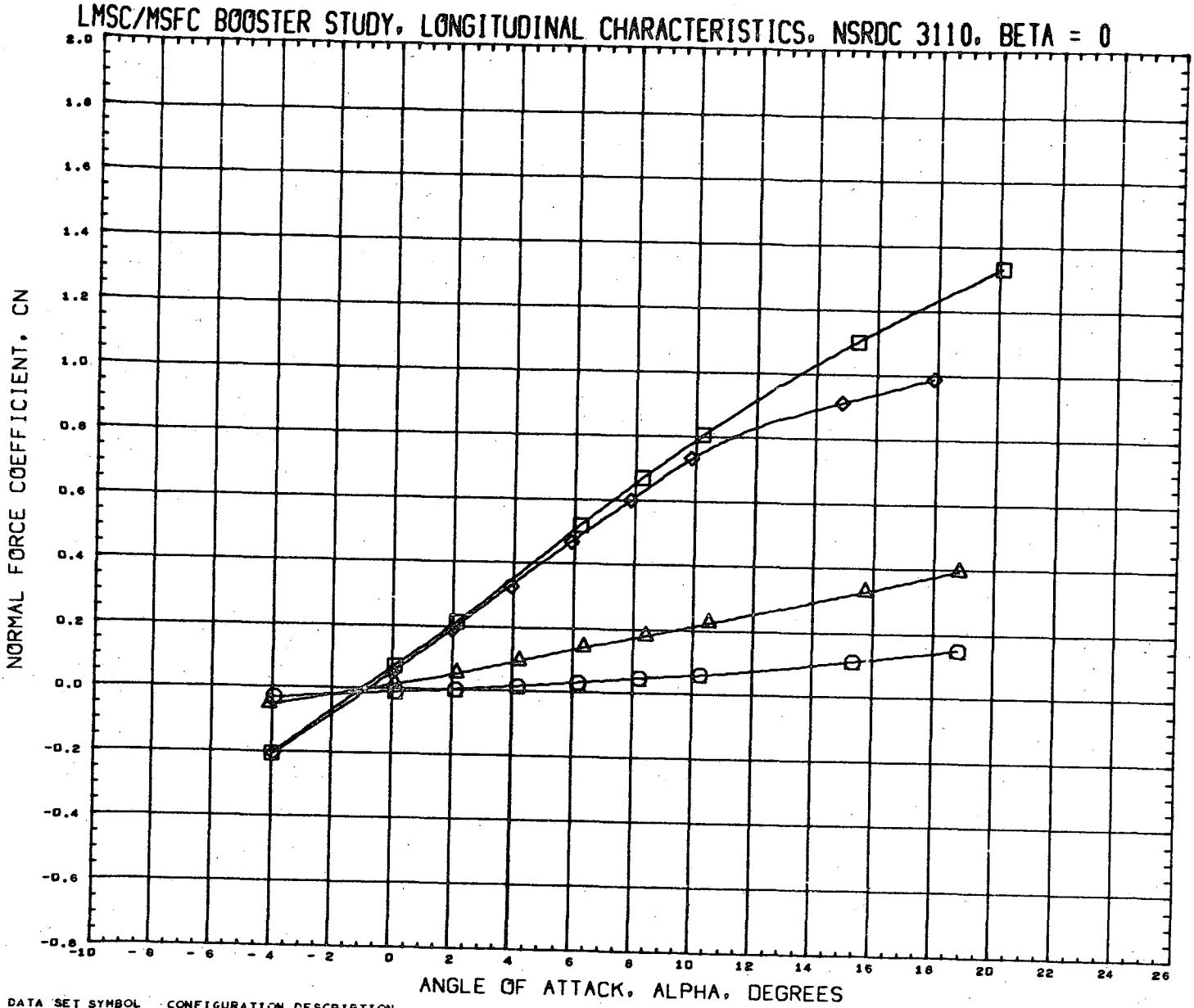


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2378)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2382)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2386)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

ELEVTR	CANARD	INCIDC	CNDPOS
30.000	0.000	3.000	1.000
30.000	10.000	3.000	1.000
30.000	20.000	3.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.360



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2317)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1
(RN2437)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1
(RN2465)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2001)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1

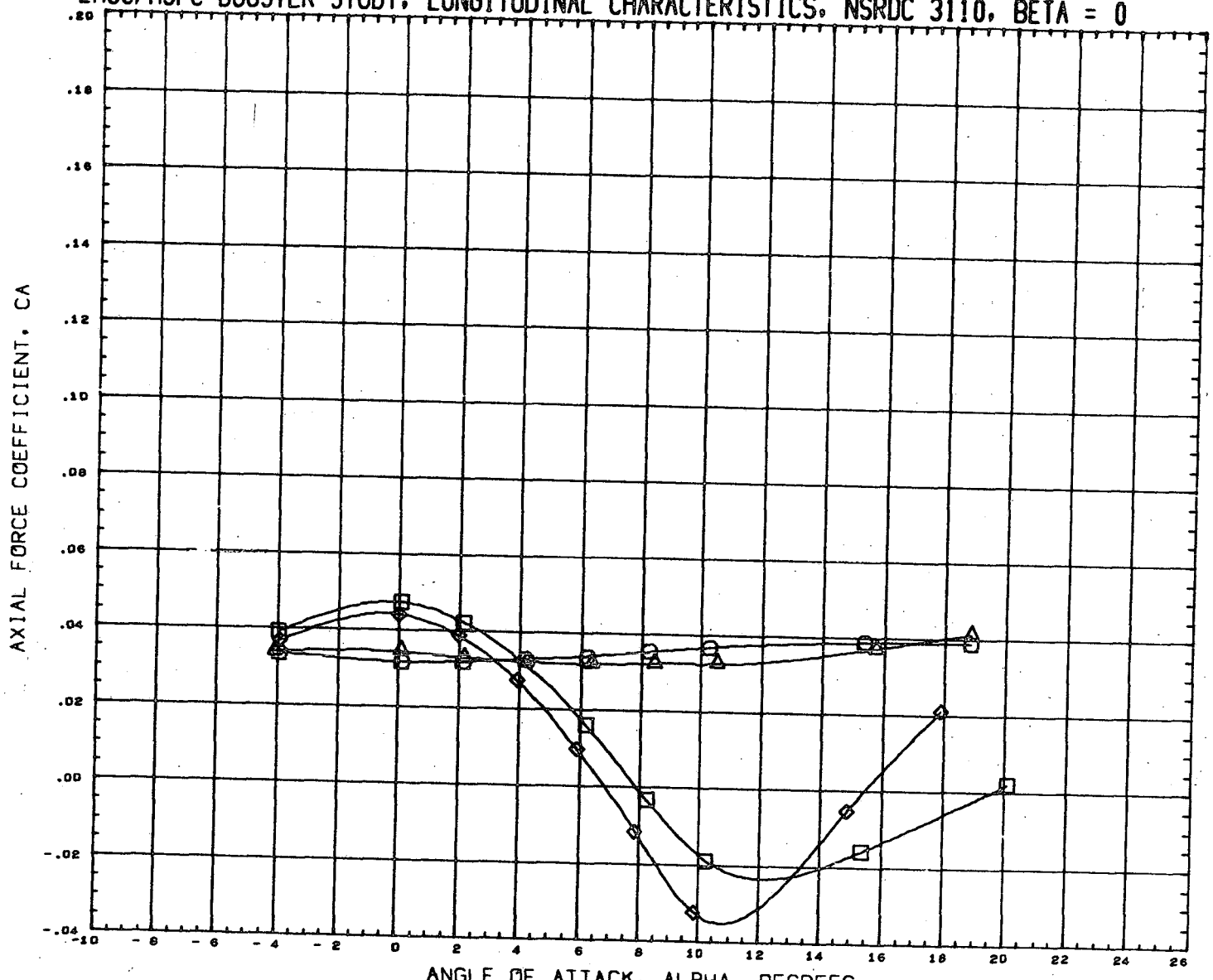
MACH 0.381

INCIDC	CNDPOS	INCIDW	WNGPOS
3.000	1.000		
		0.000	1.000
3.000	1.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

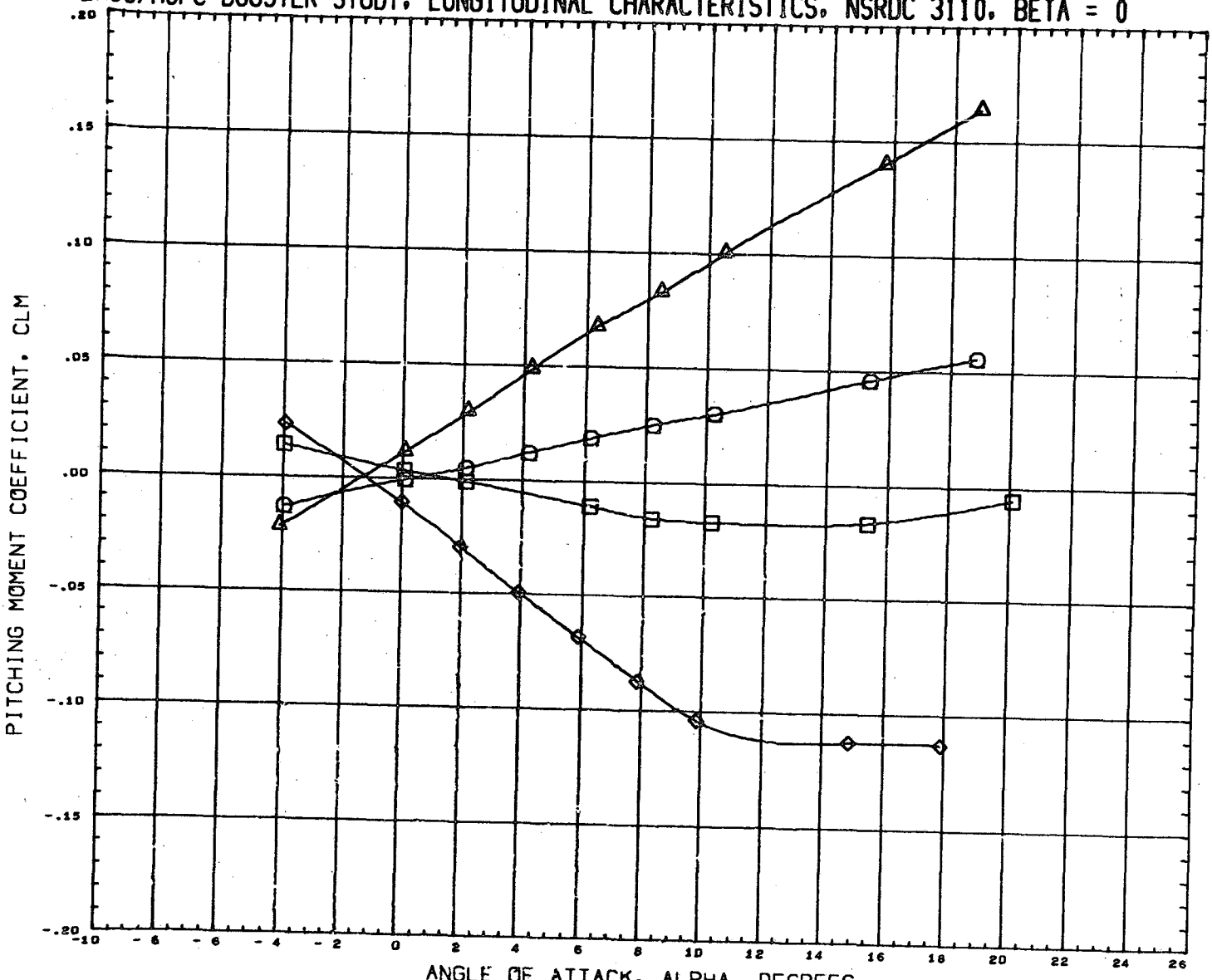


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2317) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1				
(RN2437) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1	3.000	1.000		
(RN2465) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1			0.000	1.000
(RN2001) □	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

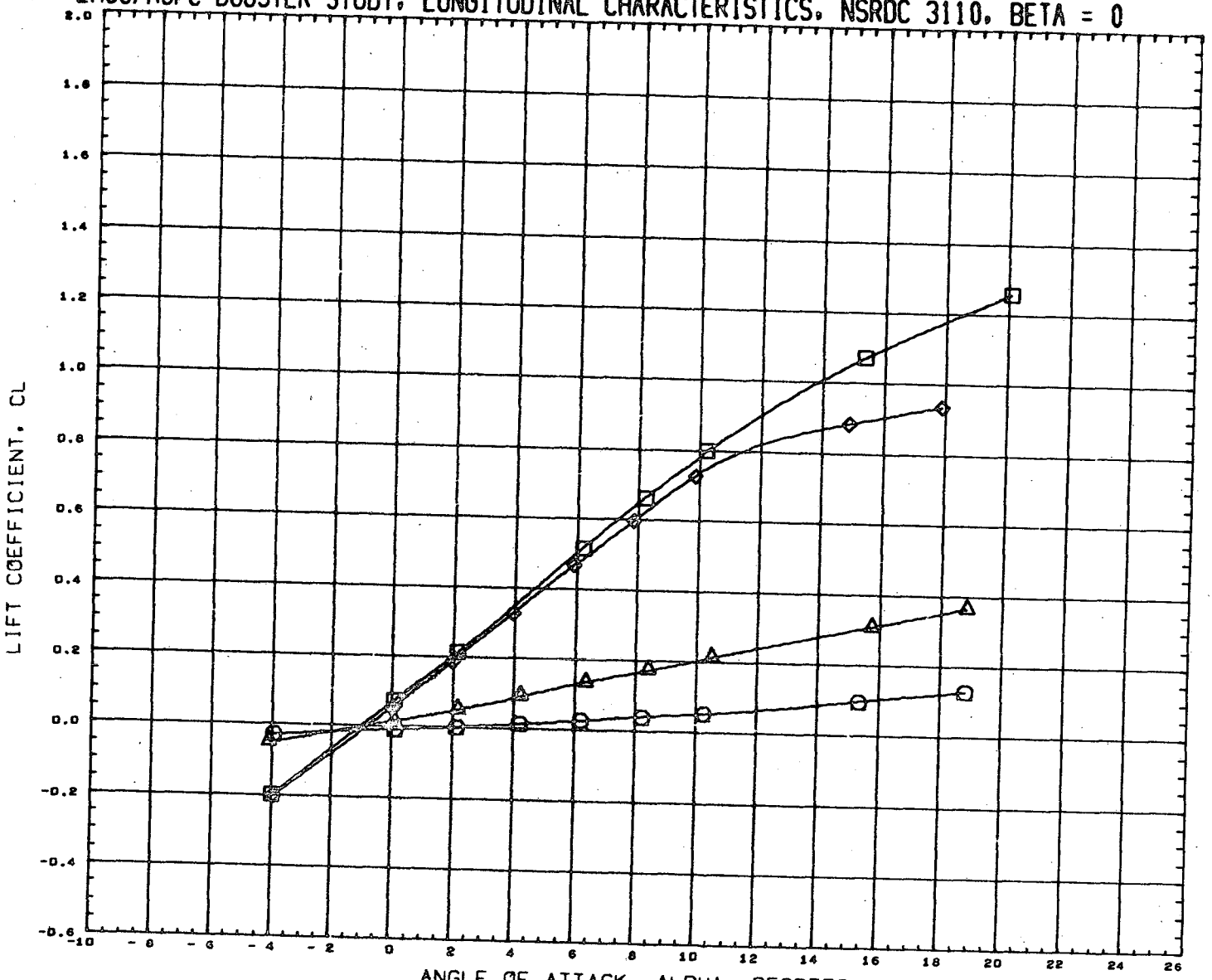


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2317)		NSRDC-3110,MSFC/LMSC BOOSTER B1				
(RN2437)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1	3.000	1.000		
(RN2465)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1			0.000	1.000
(RN2001)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000

NACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

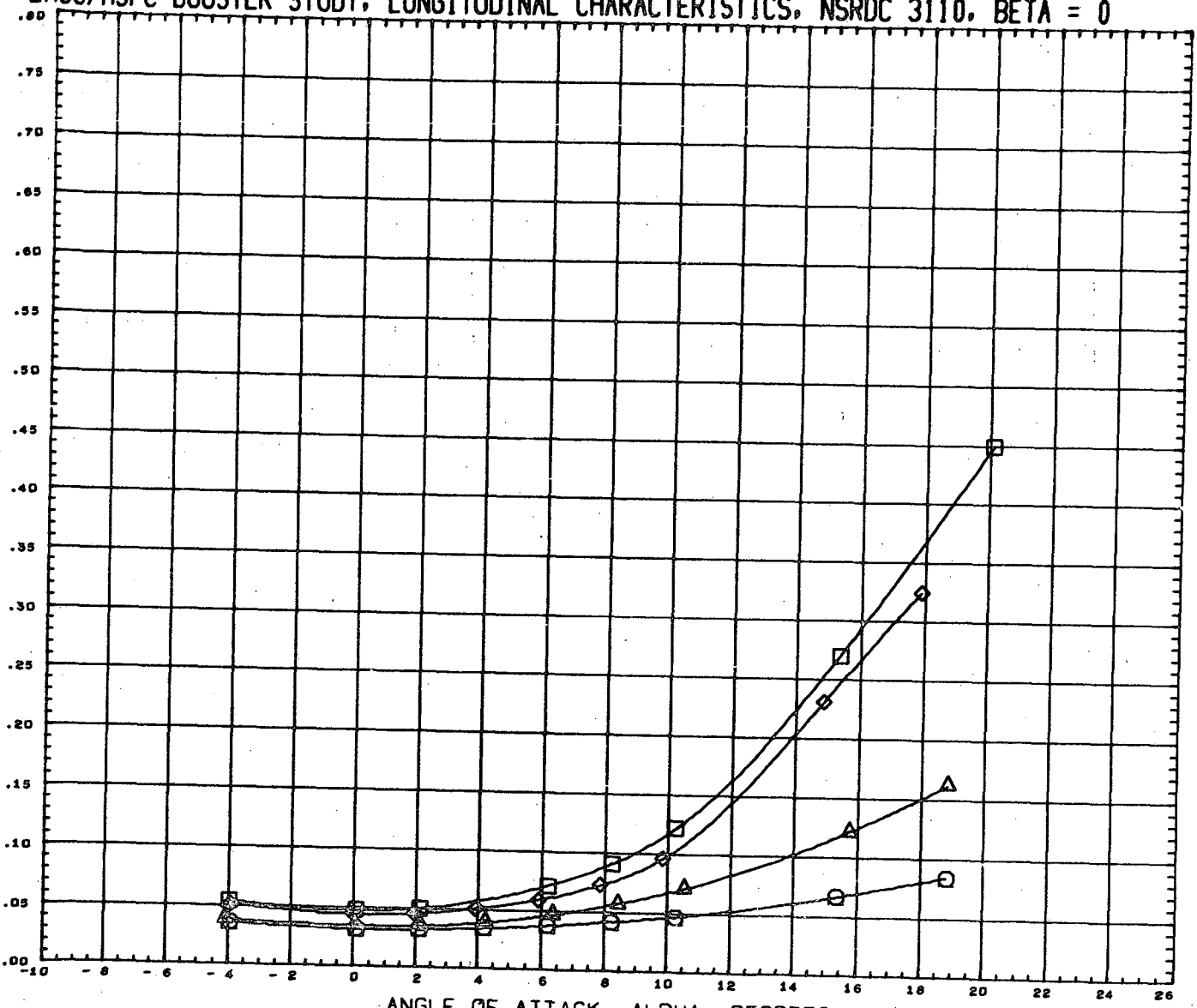


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2317)	NSRDC-3110,MSFC/LMSC BOOSTER B1				
(RN2437)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1	3.000	1.000		
(RN2465)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1			0.000	1.000
(RN2001)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



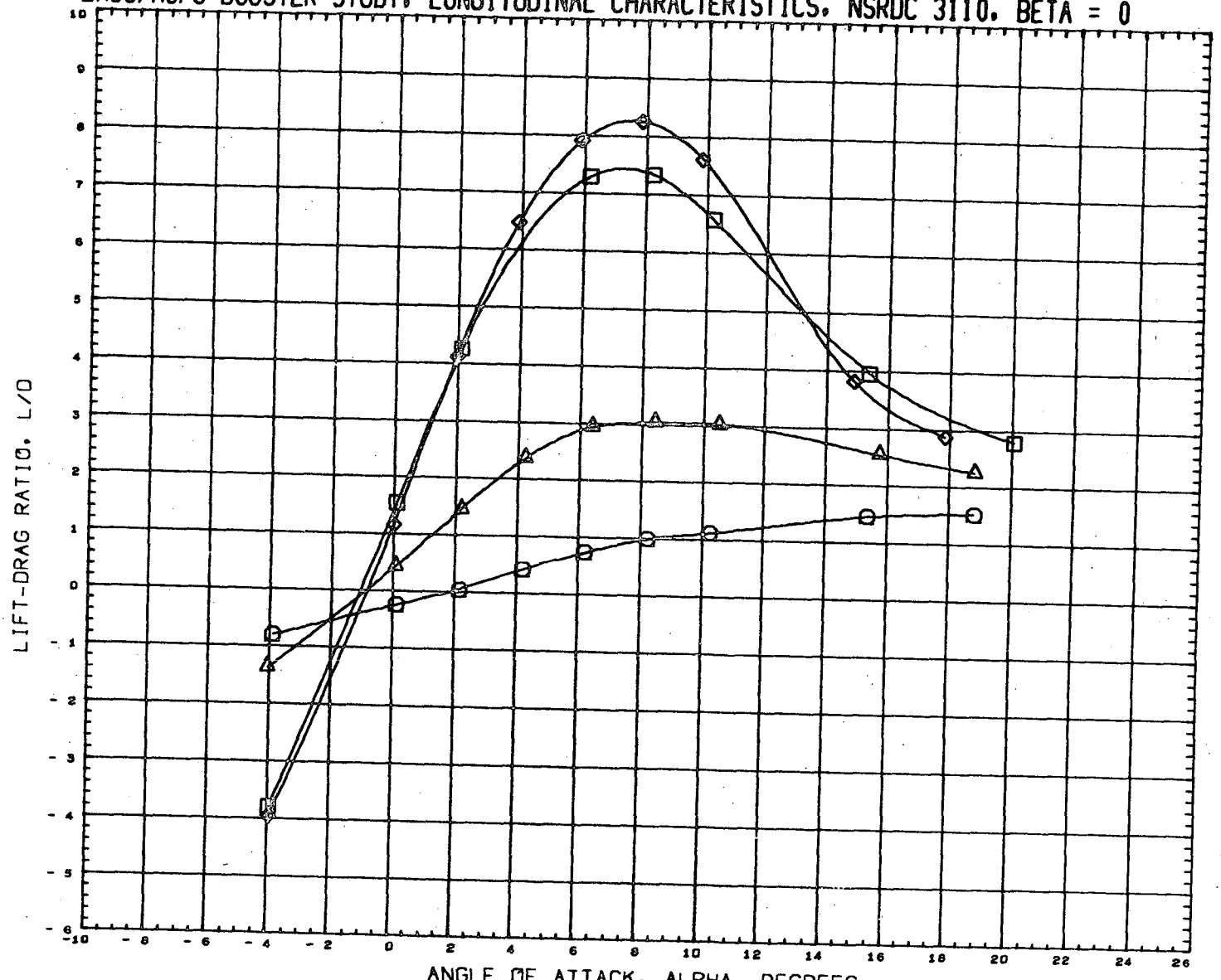
DATA SET SYMBOL		CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2317)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1				
(RN2437)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1	3.000	1.000		
(RN2465)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1			0.000	1.000
(RN2001)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0

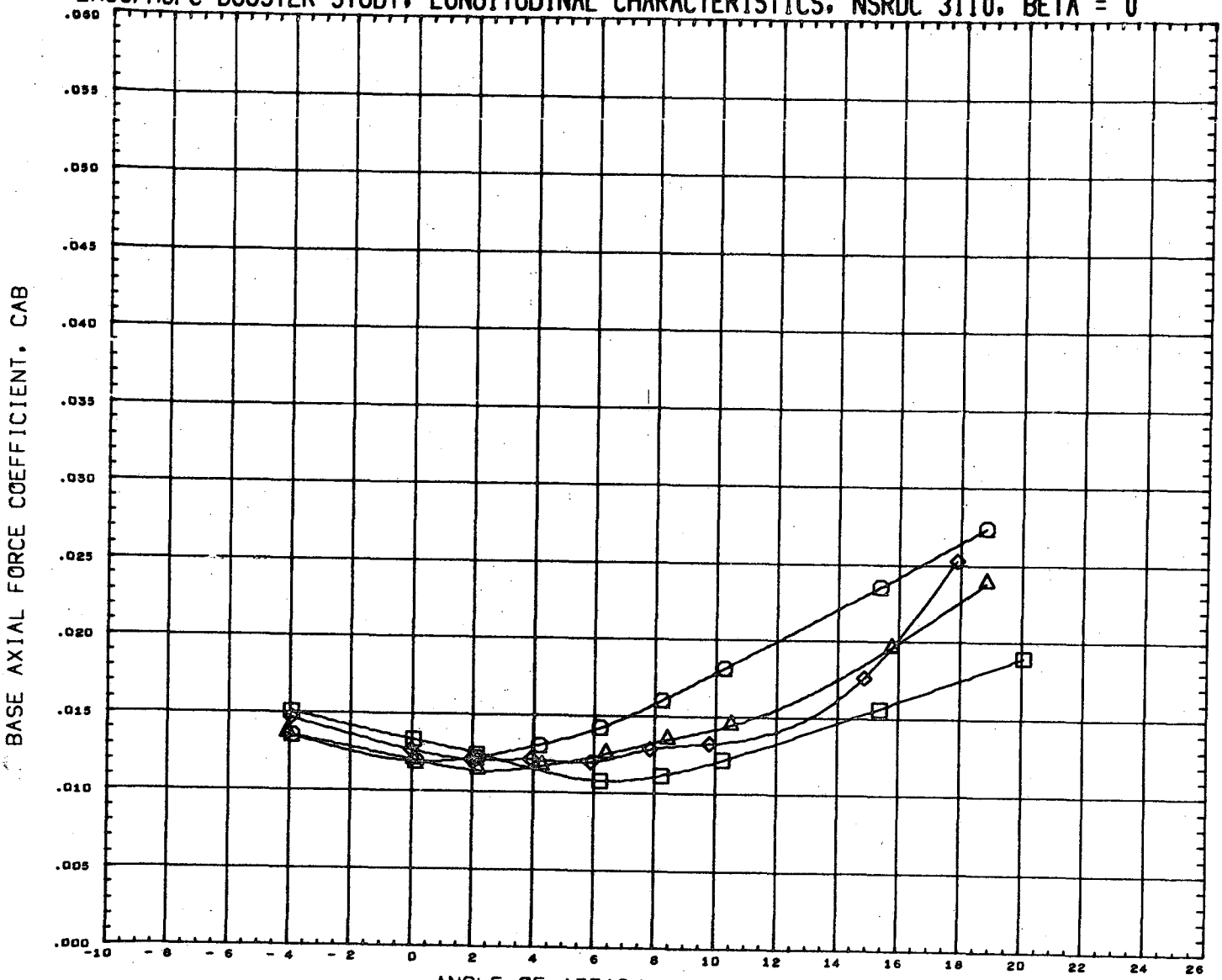


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	INCIDC	CNDFOS	INCIDW	WNGFOS
(RN2317)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1				
(RN2437)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1	3.000	1.000		
(RN2465)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1			0.000	1.000
(RN2001)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



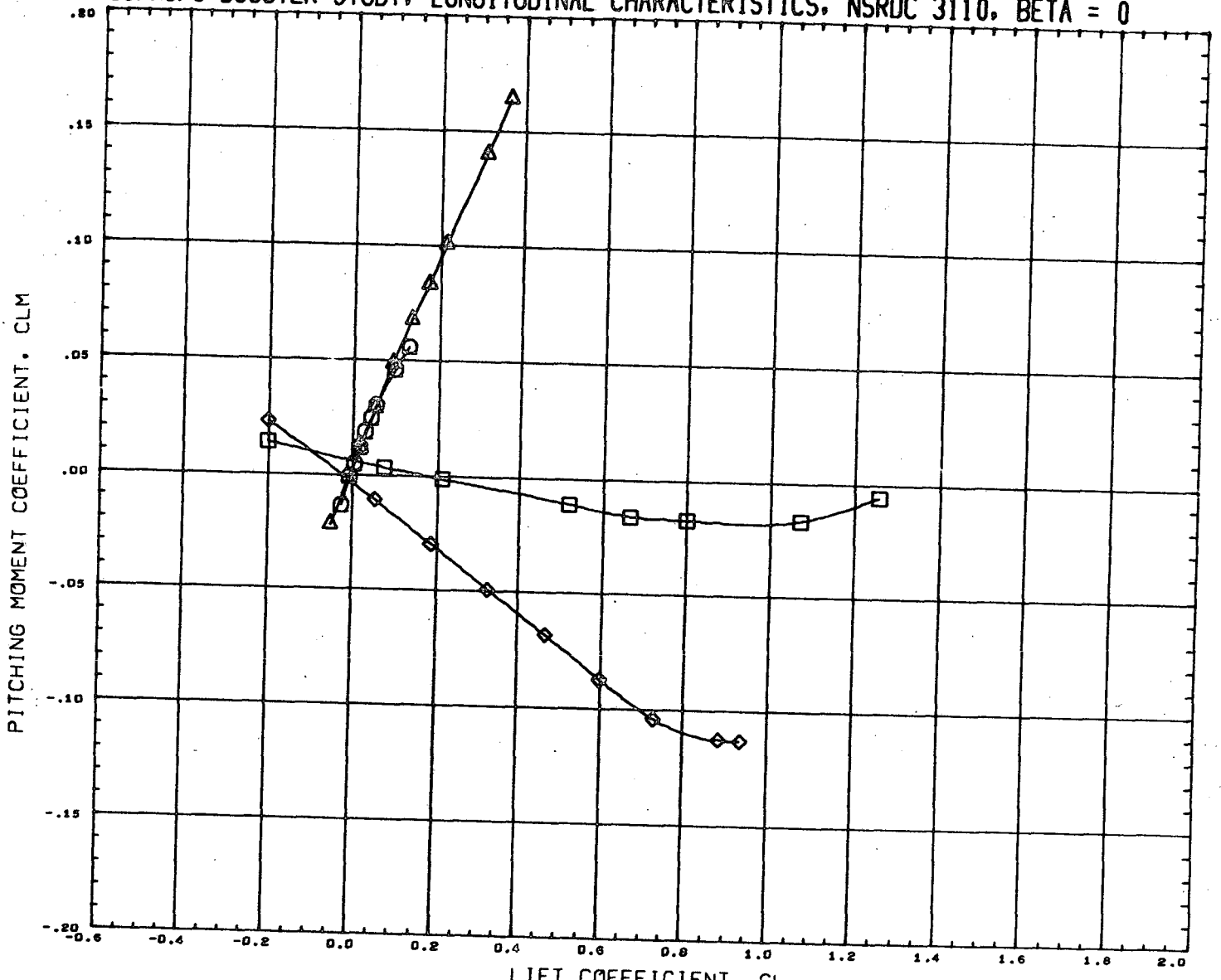
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2317)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1				
(RN2437)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1	3.000	1.000		
(RN2465)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1			0.000	1.000
(RN2001)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



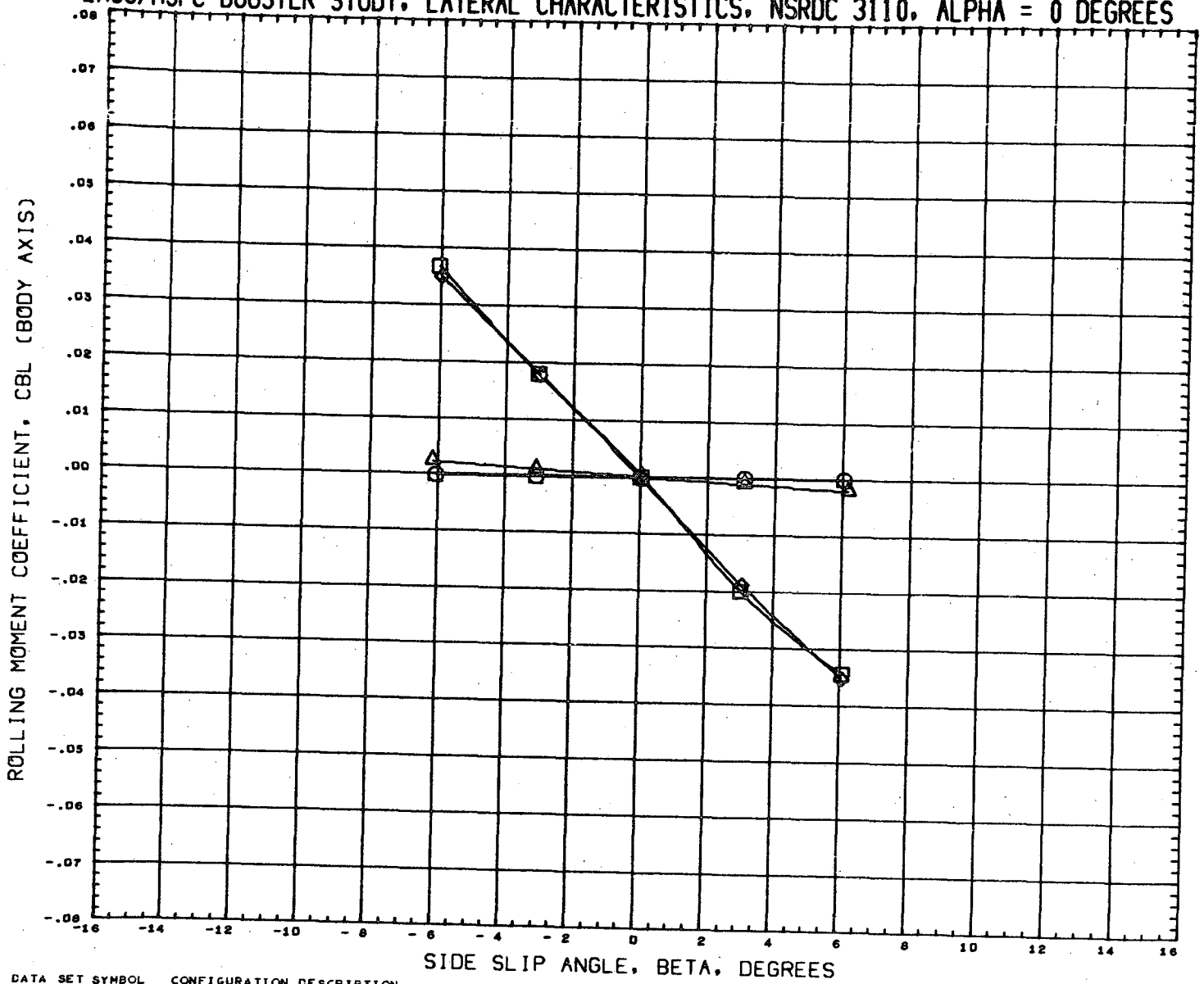
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2317)	NSRDC-3110,MSFC/LMSC BOOSTER B1				
(RN2437)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1	3.000	1.000		
(RN2465)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1			0.000	1.000
(RN2001)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES

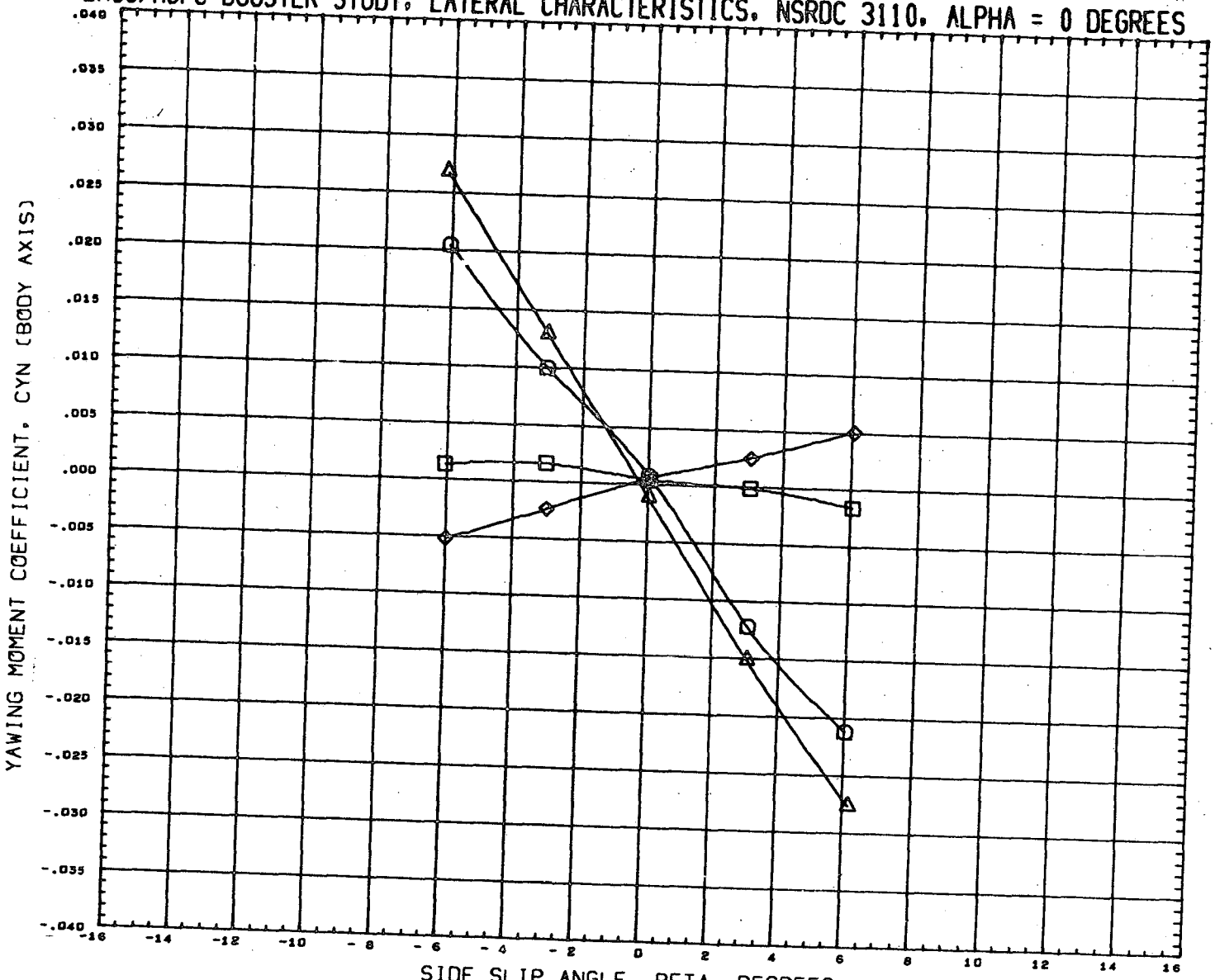


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2318)		NSRDC-3110,MSFC/LMSC BOOSTER B1				
(RN2438)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1	3.000	1.000		
(RN2466)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1			0.000	1.000
(RN2002)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES

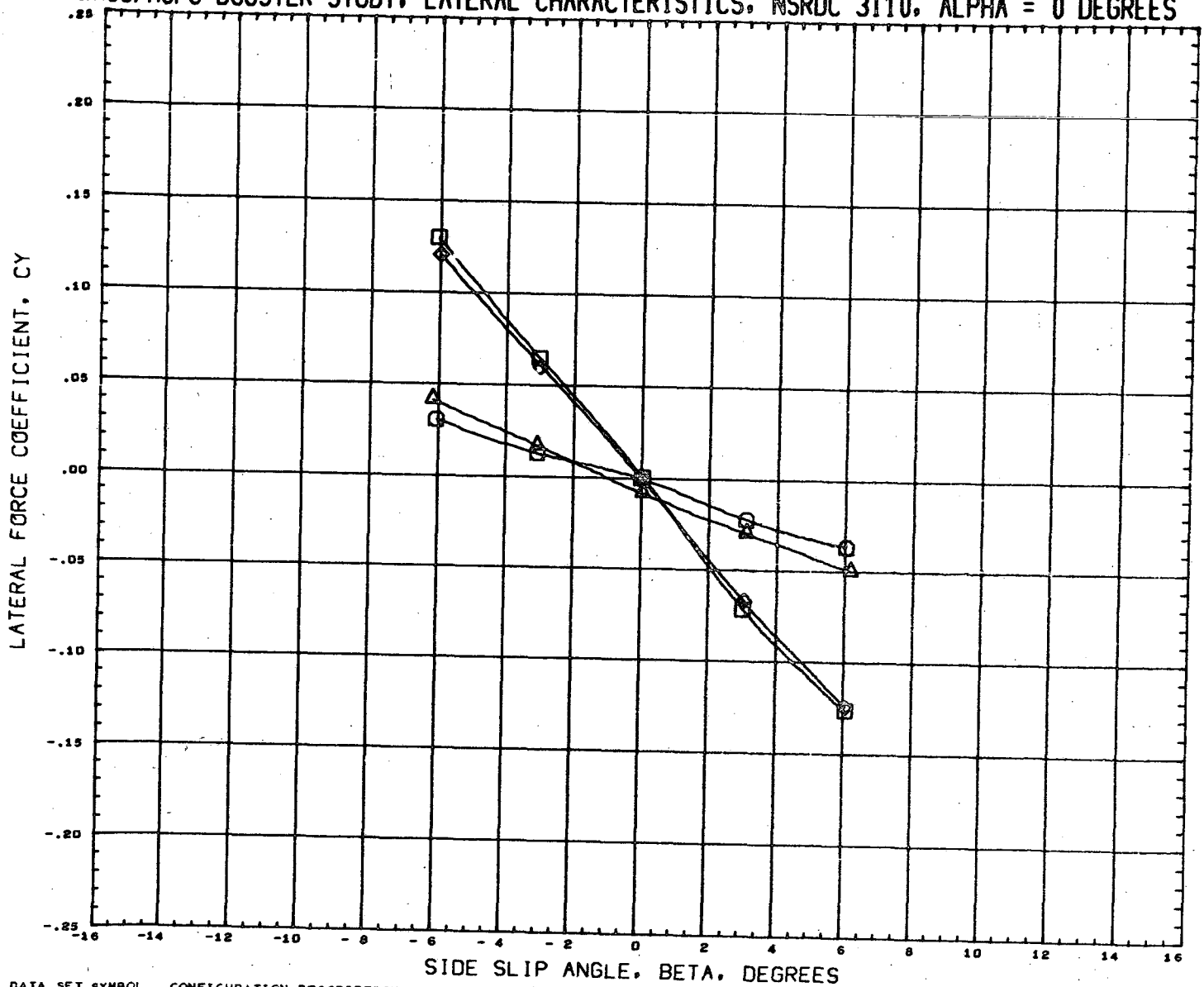


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2318)	NSRDC-3110,MSFC/LMSC BOOSTER B1				
(RN2438)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1	3.000	1.000		
(RN2466)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1			0.000	1.000
(RN2002)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES

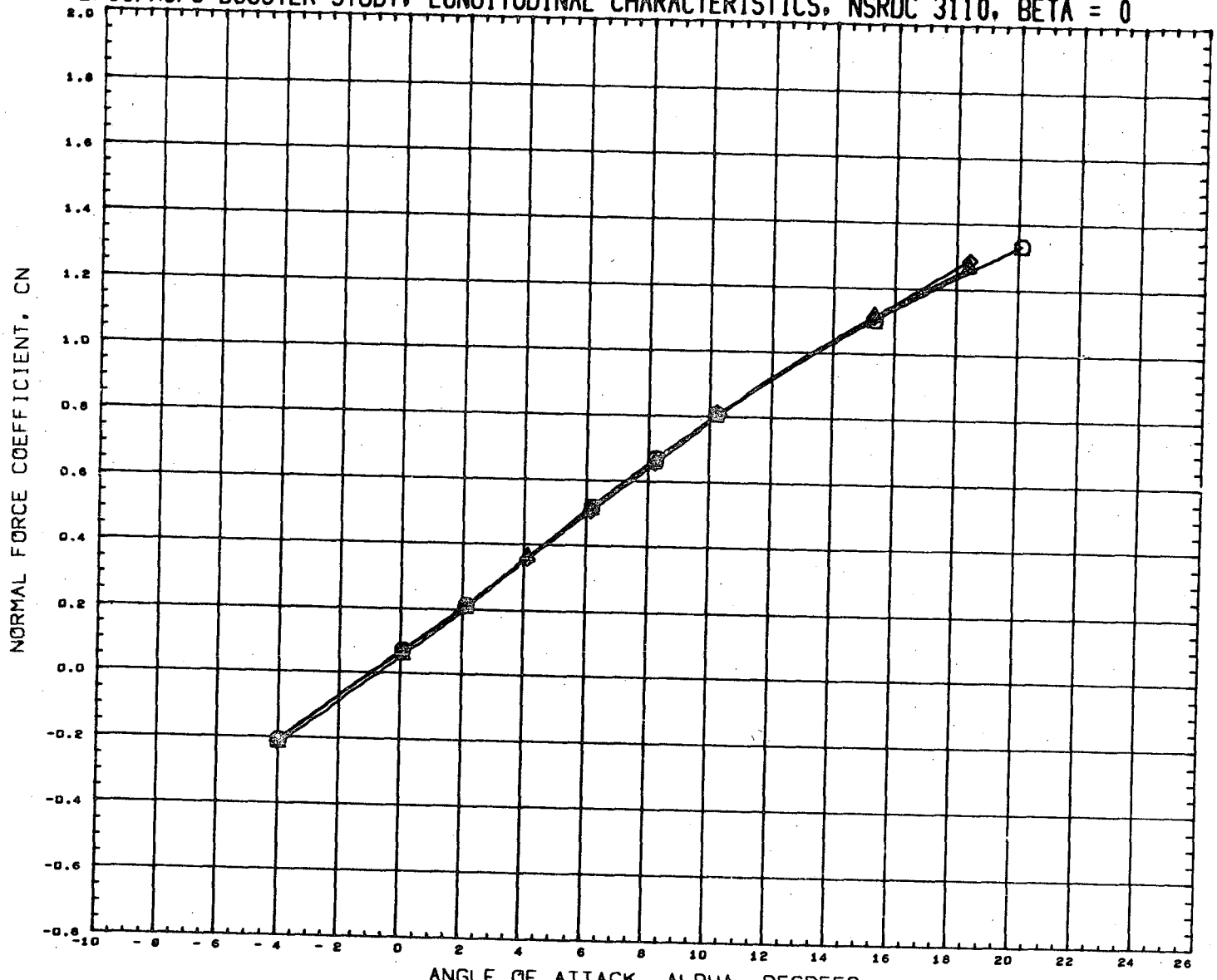


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	INCIDC	CNDPOS	INCIDW	WNGPOS
(RN2318)		NSRDC-3110,MSFC/LMSC BOOSTER B1				
(RN2438)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1	3.000	1.000		
(RN2466)		NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1			0.000	1.000
(RN2002)		NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1	3.000	1.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2001)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2389)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2393)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

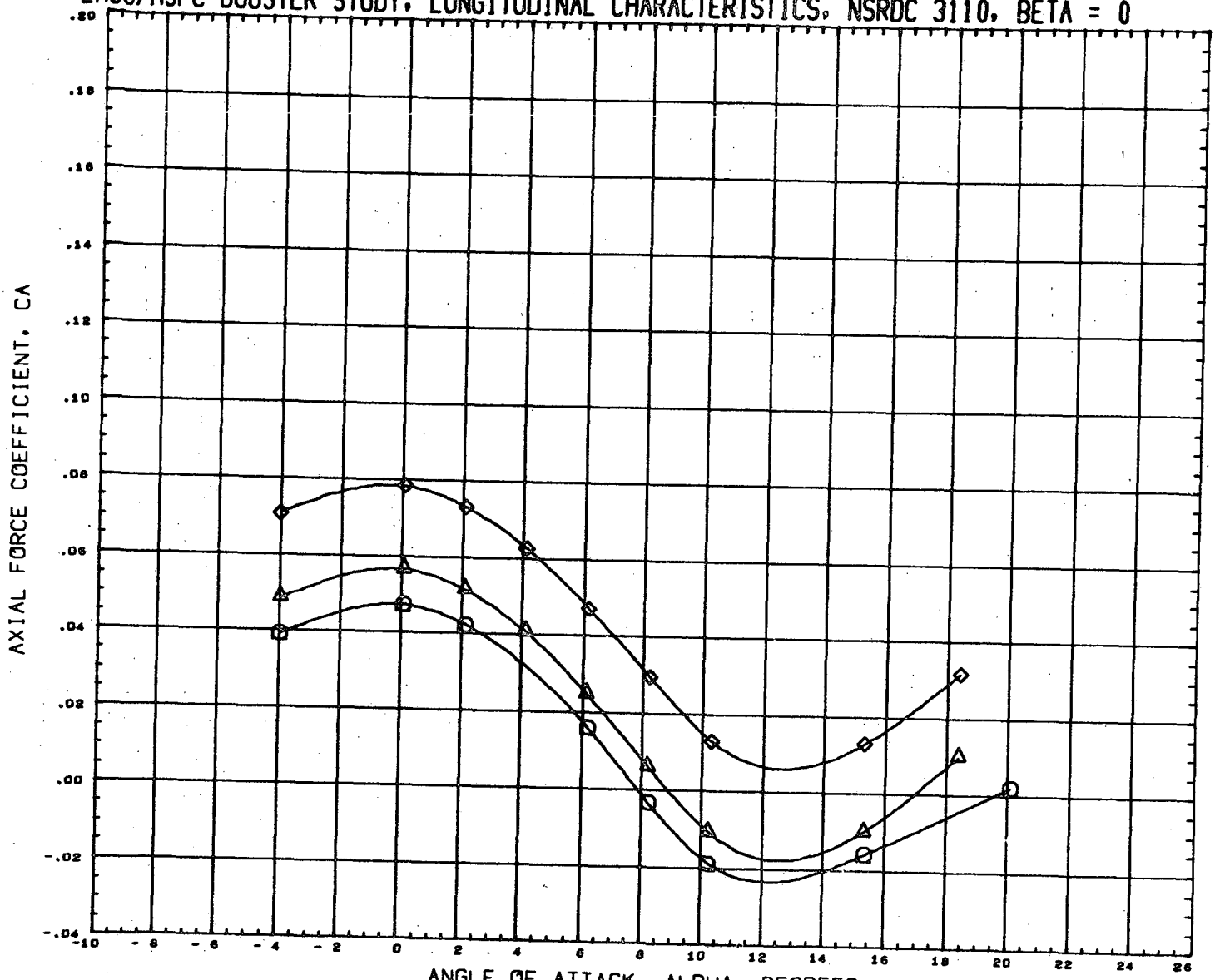
AILRON	CANARD	ELEVTR	CNDFOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.361

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2369)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2393)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

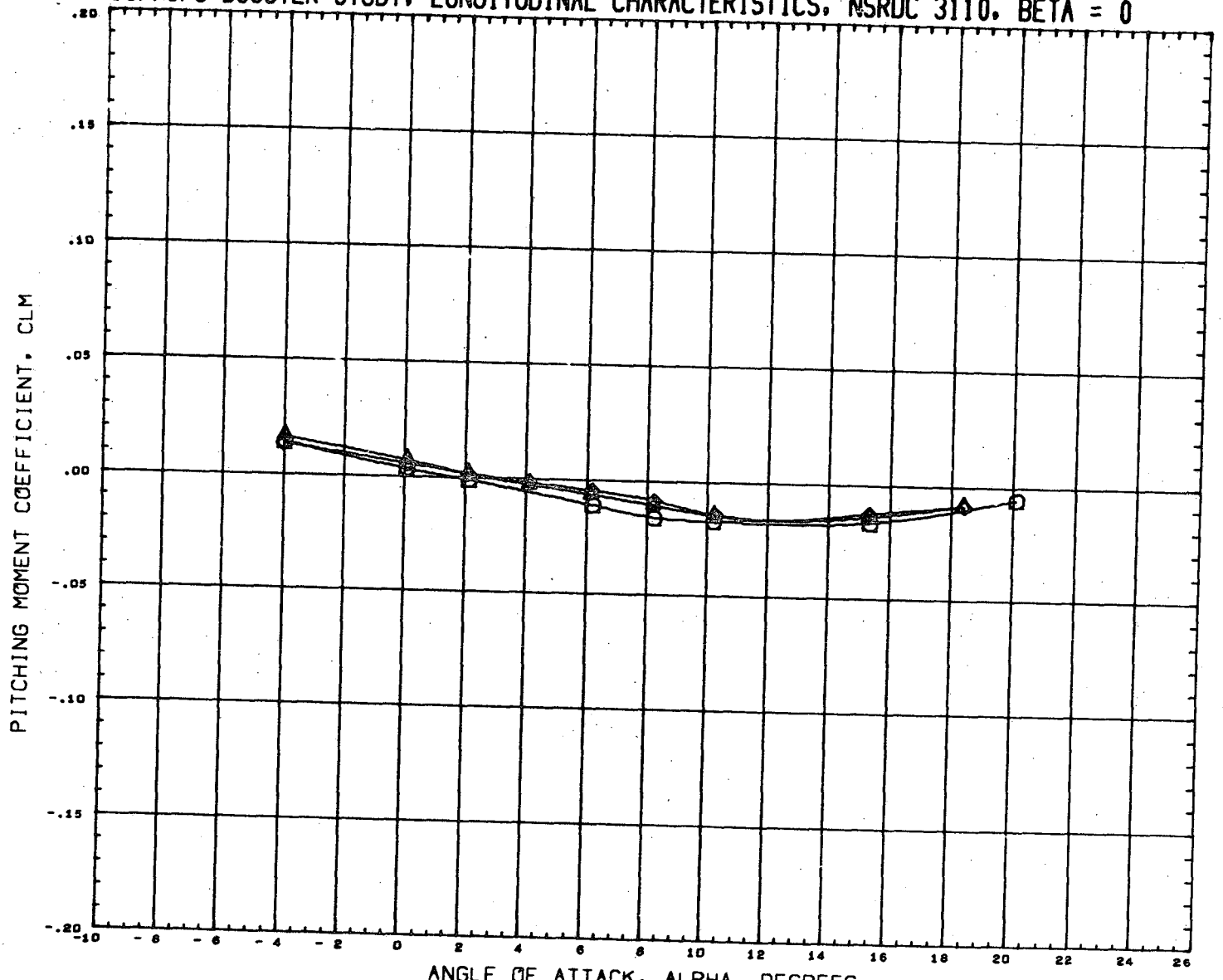
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2389)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2393)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

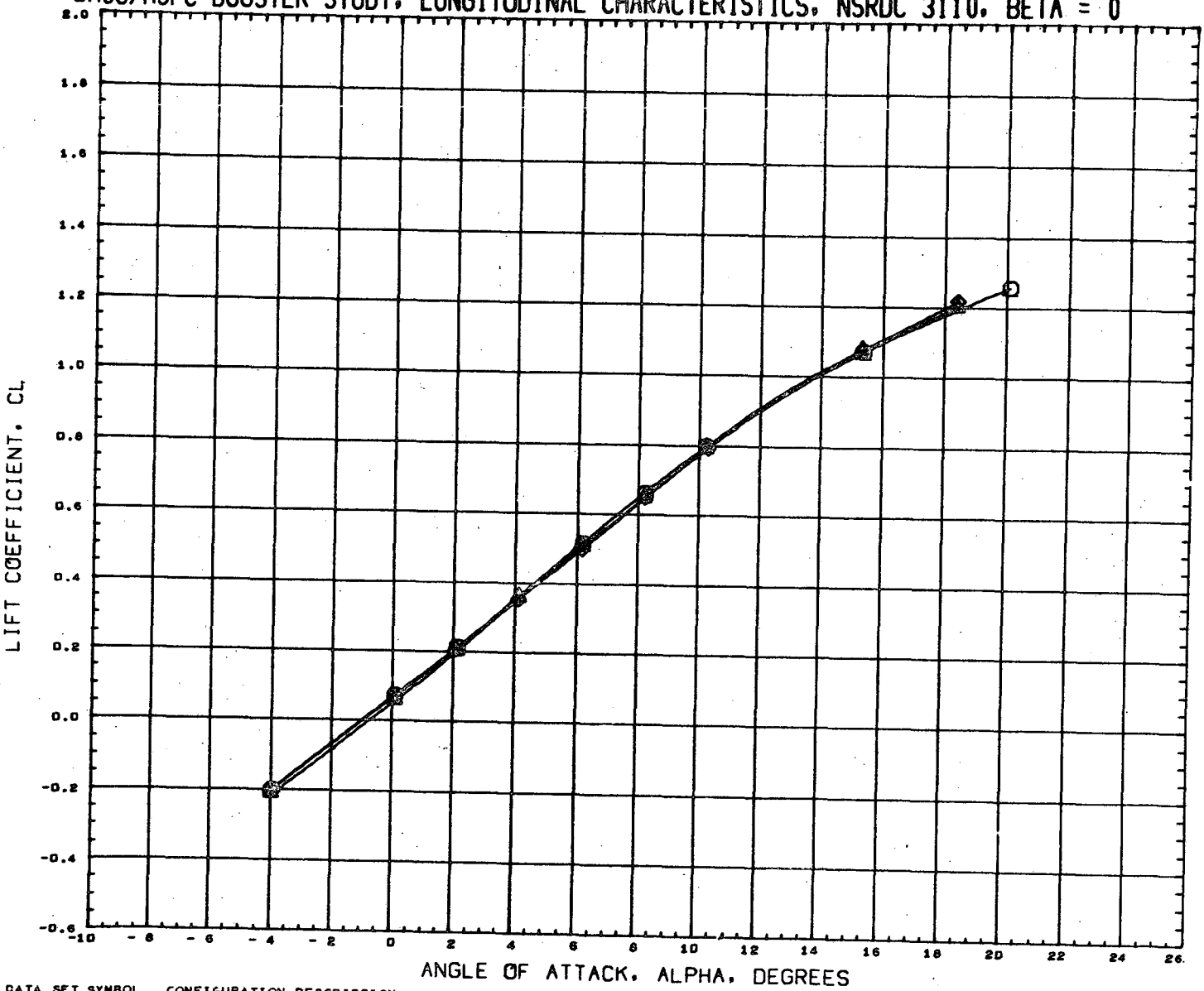
AILRON	CANARD	ELEVTR	CNDFOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



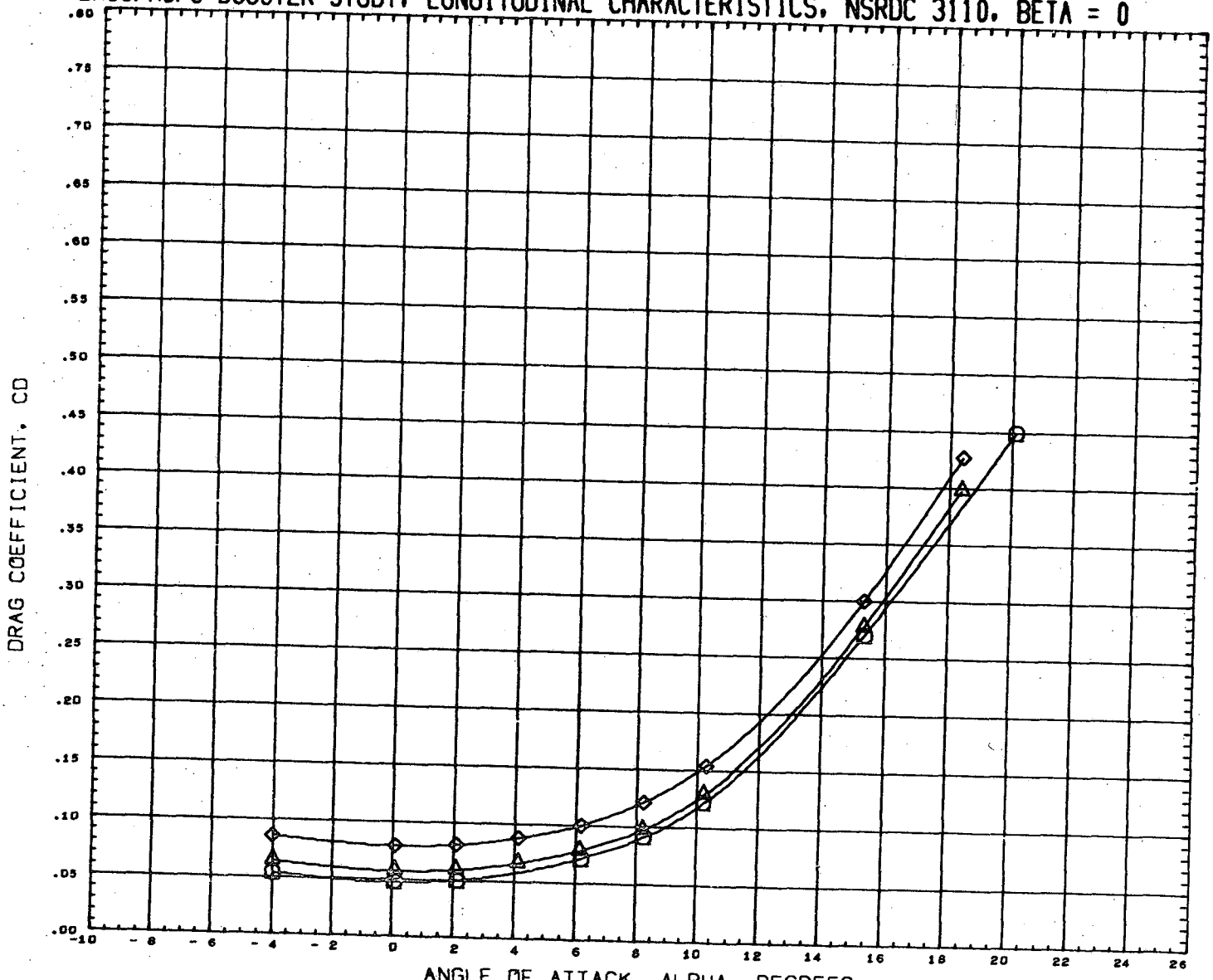
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2389)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2393)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



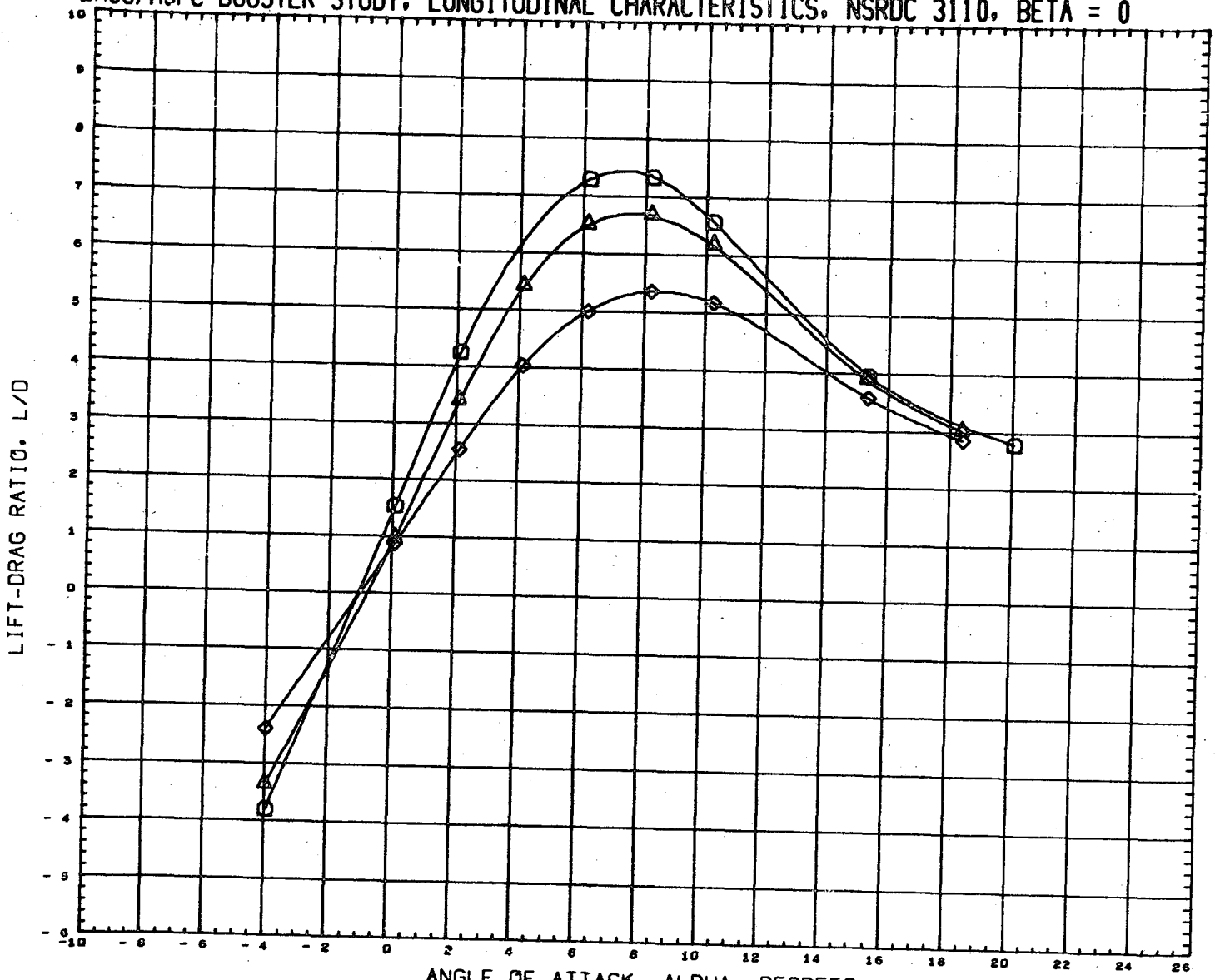
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2389)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2393)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.361

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2389)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2393)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

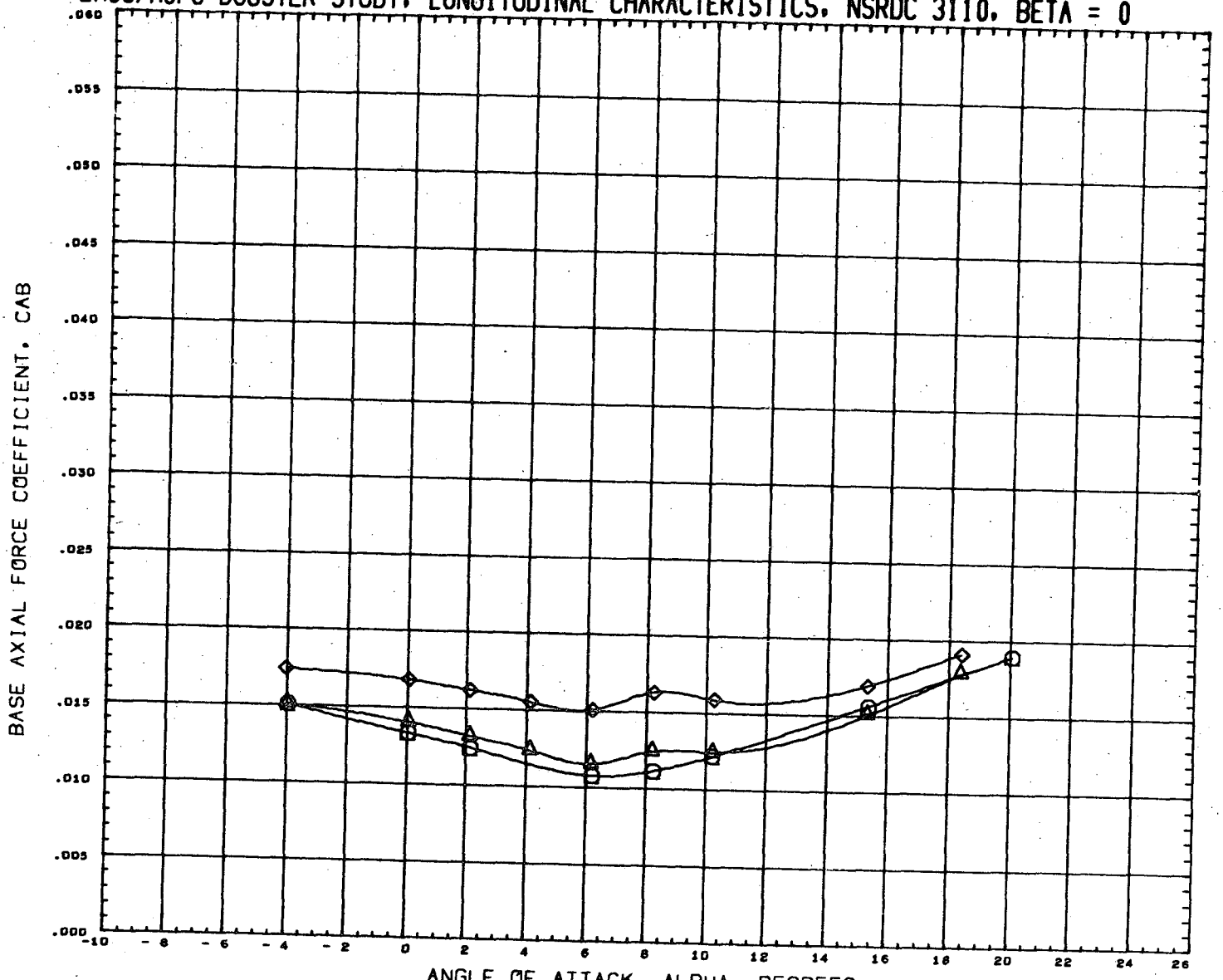
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2369)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2393)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

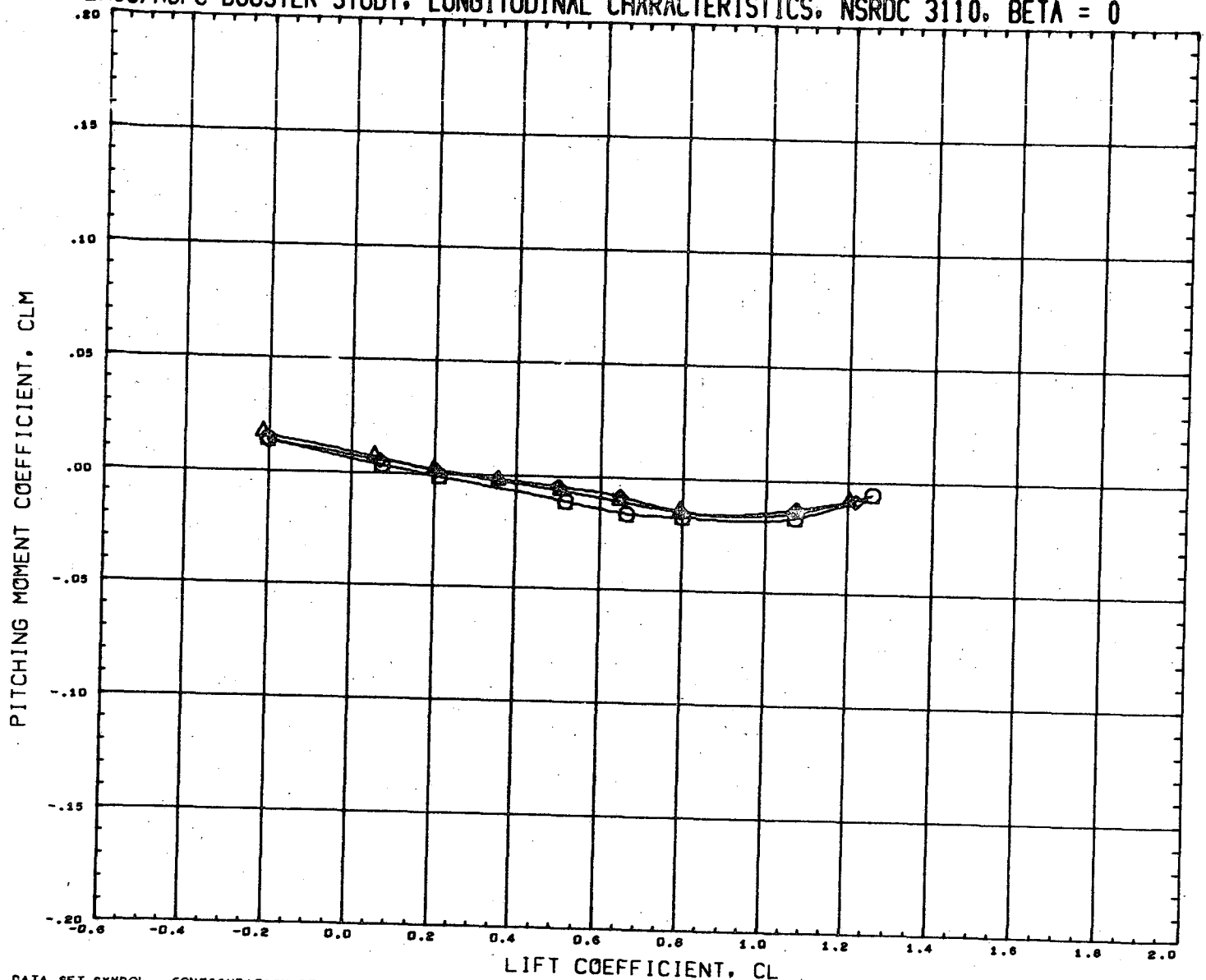
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2001)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2389)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2393)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

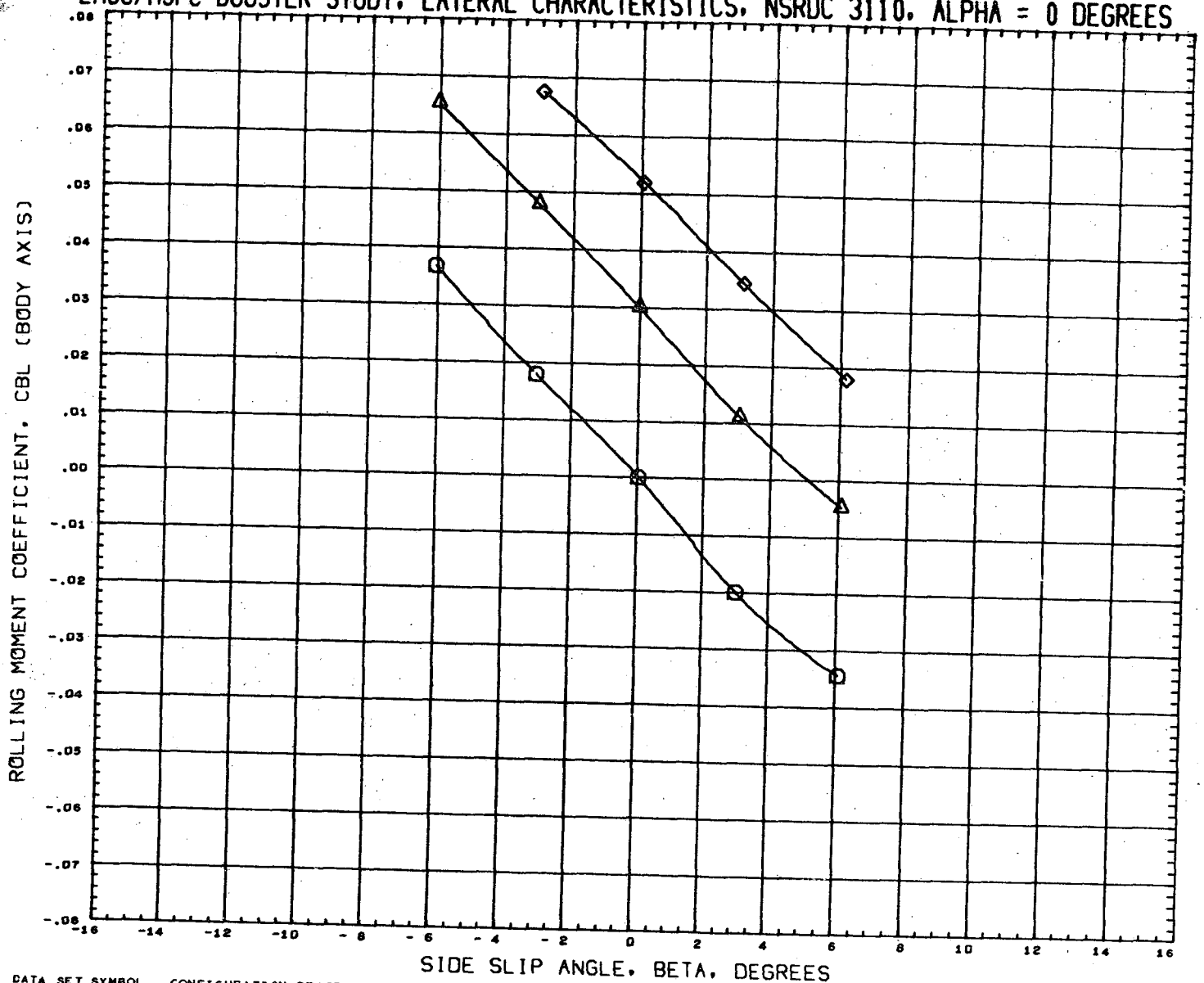
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2002)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2390)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2394)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

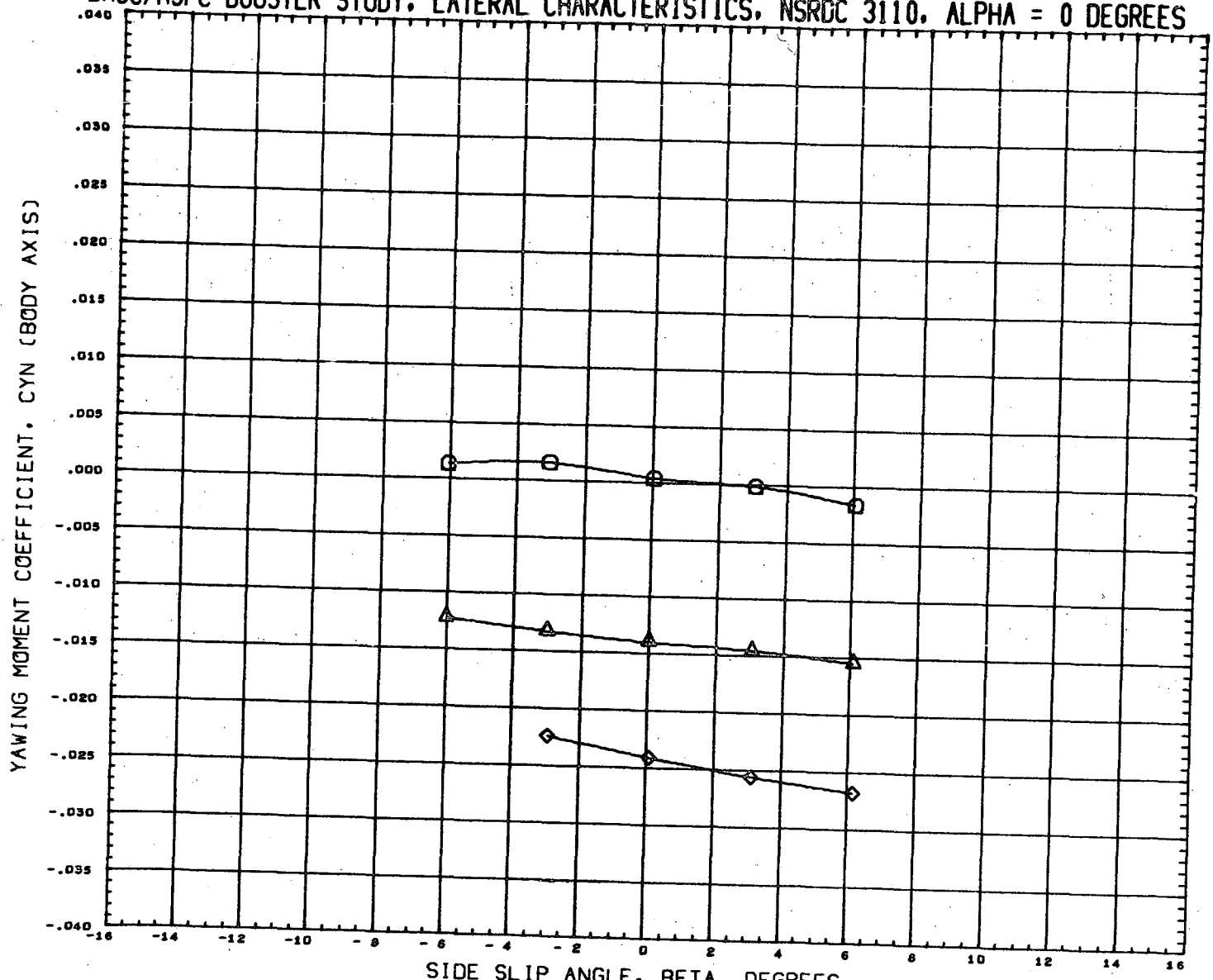
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2002)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2390)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2394)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

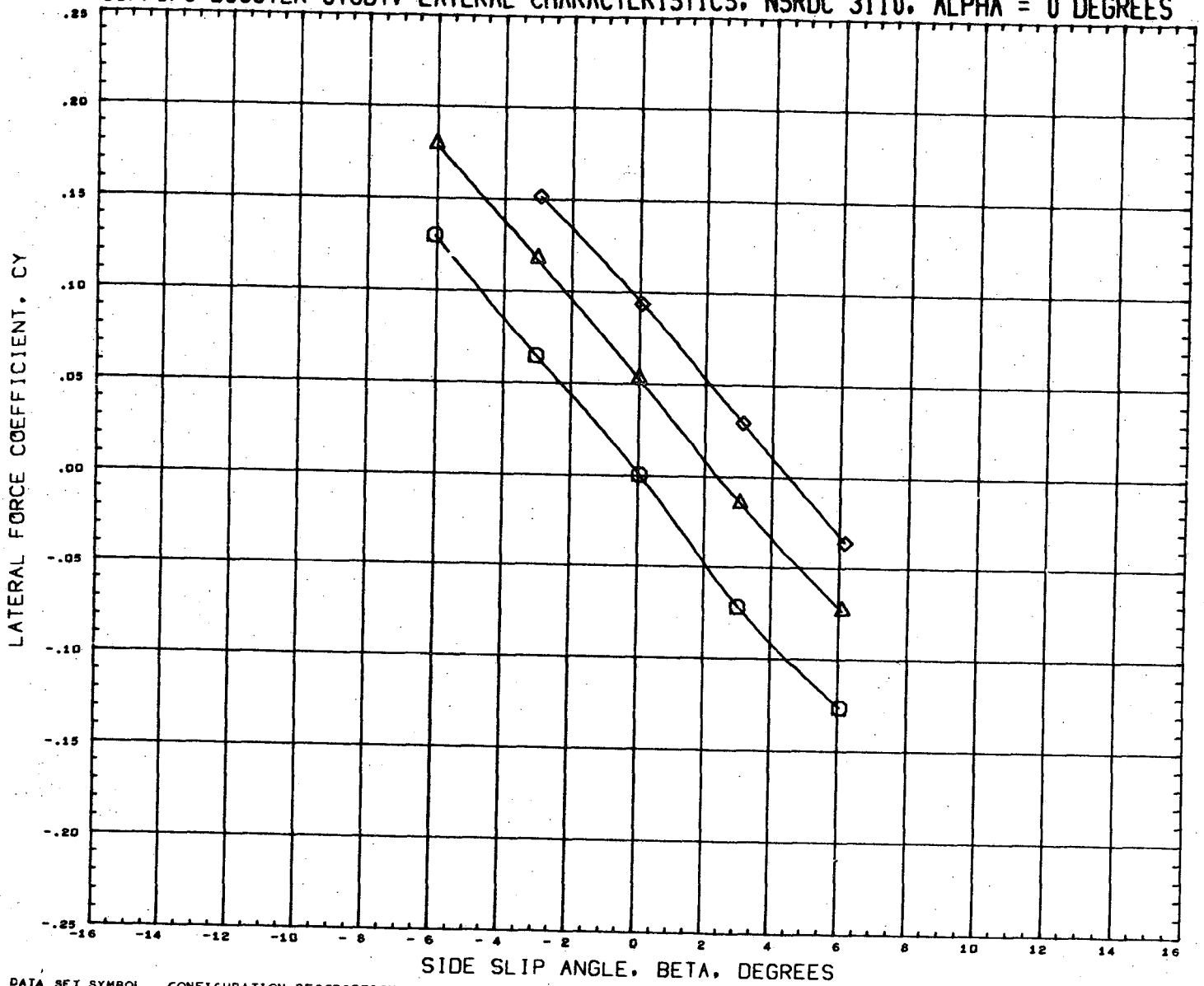
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2002)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2390)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2394)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

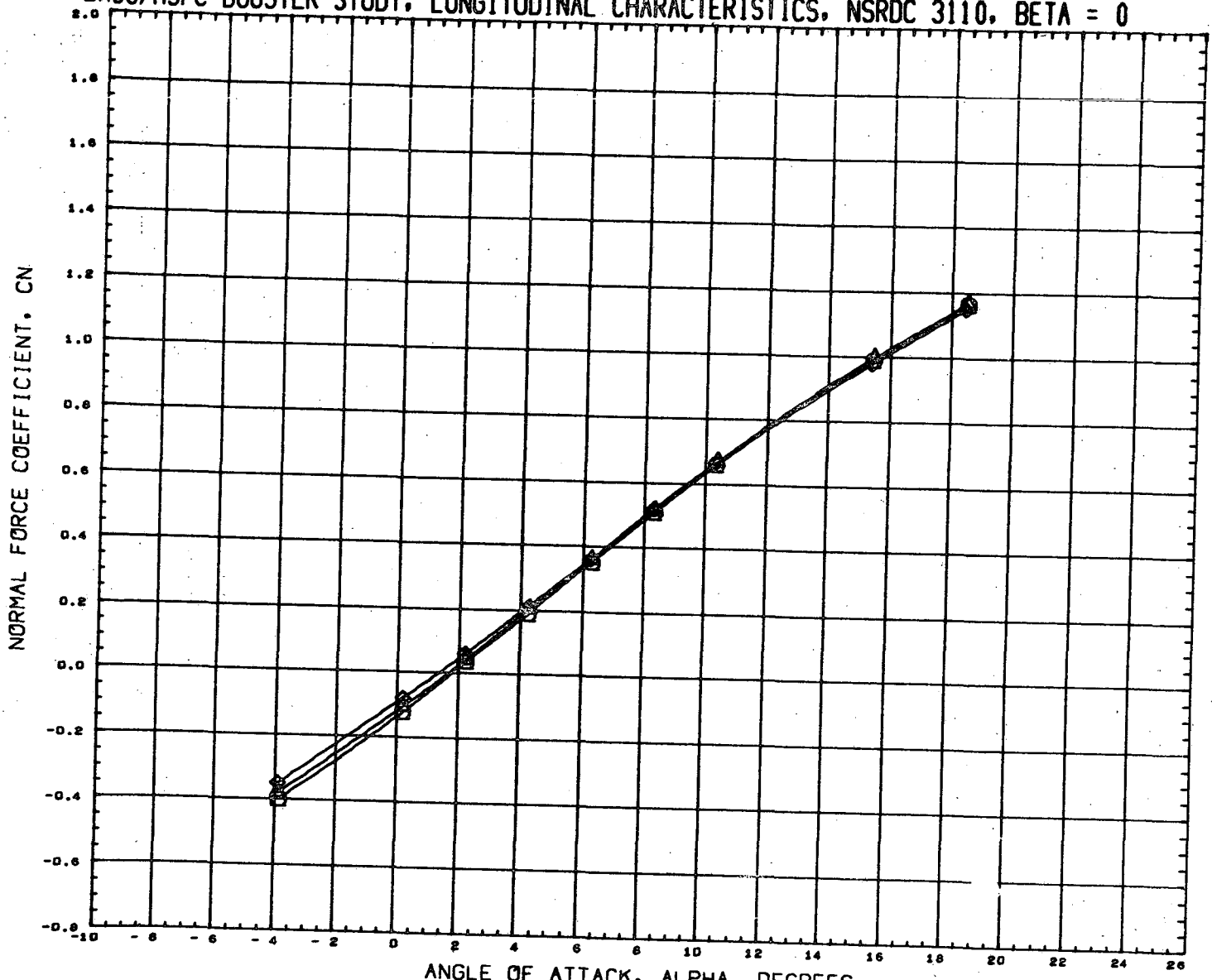
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2341)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2397)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2401)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

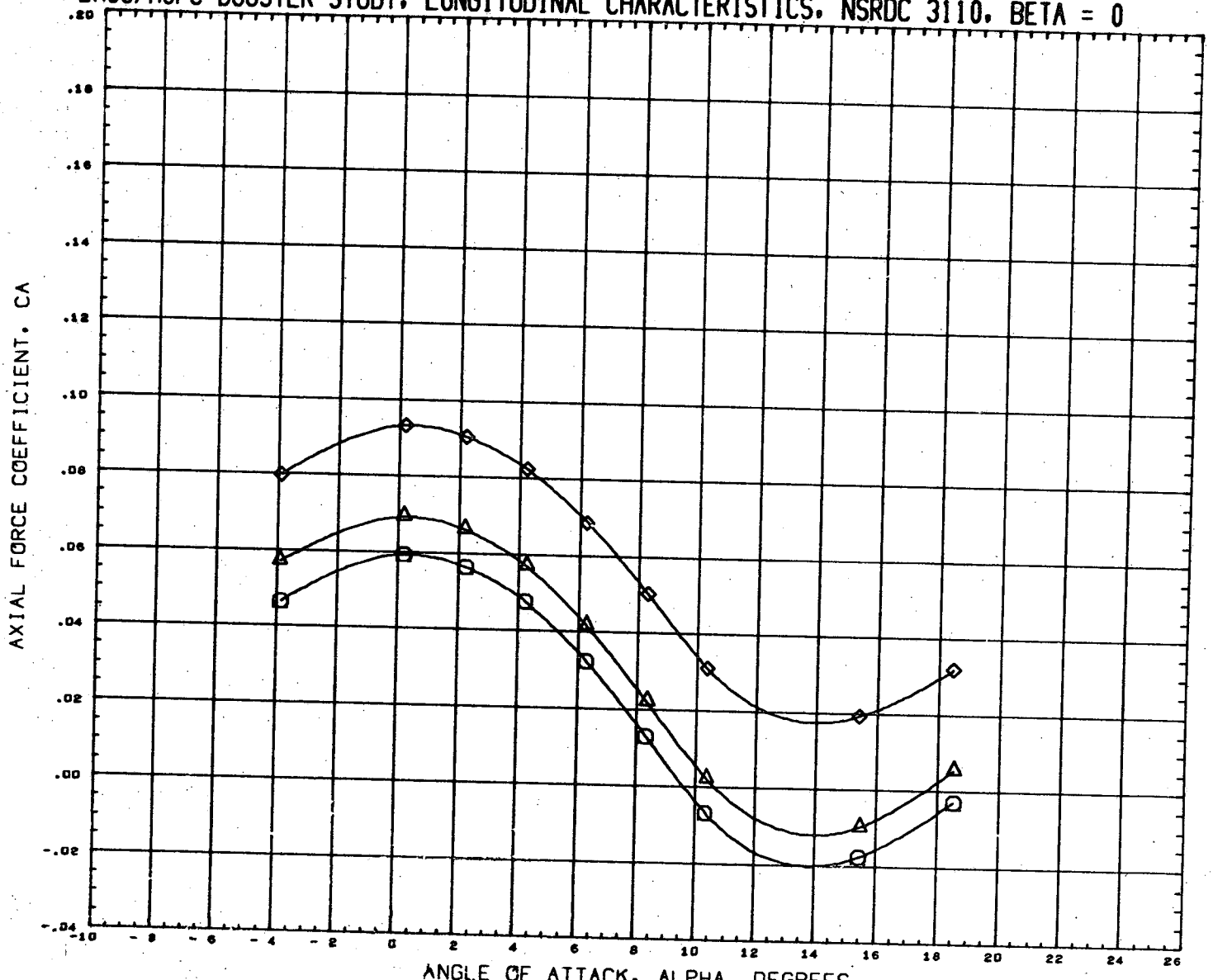
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	-10.000	1.000
10.000	0.000	-10.000	1.000
20.000	0.000	-10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4350	INCHES
BREF	41.4350	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.380

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2341)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2397)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2405)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

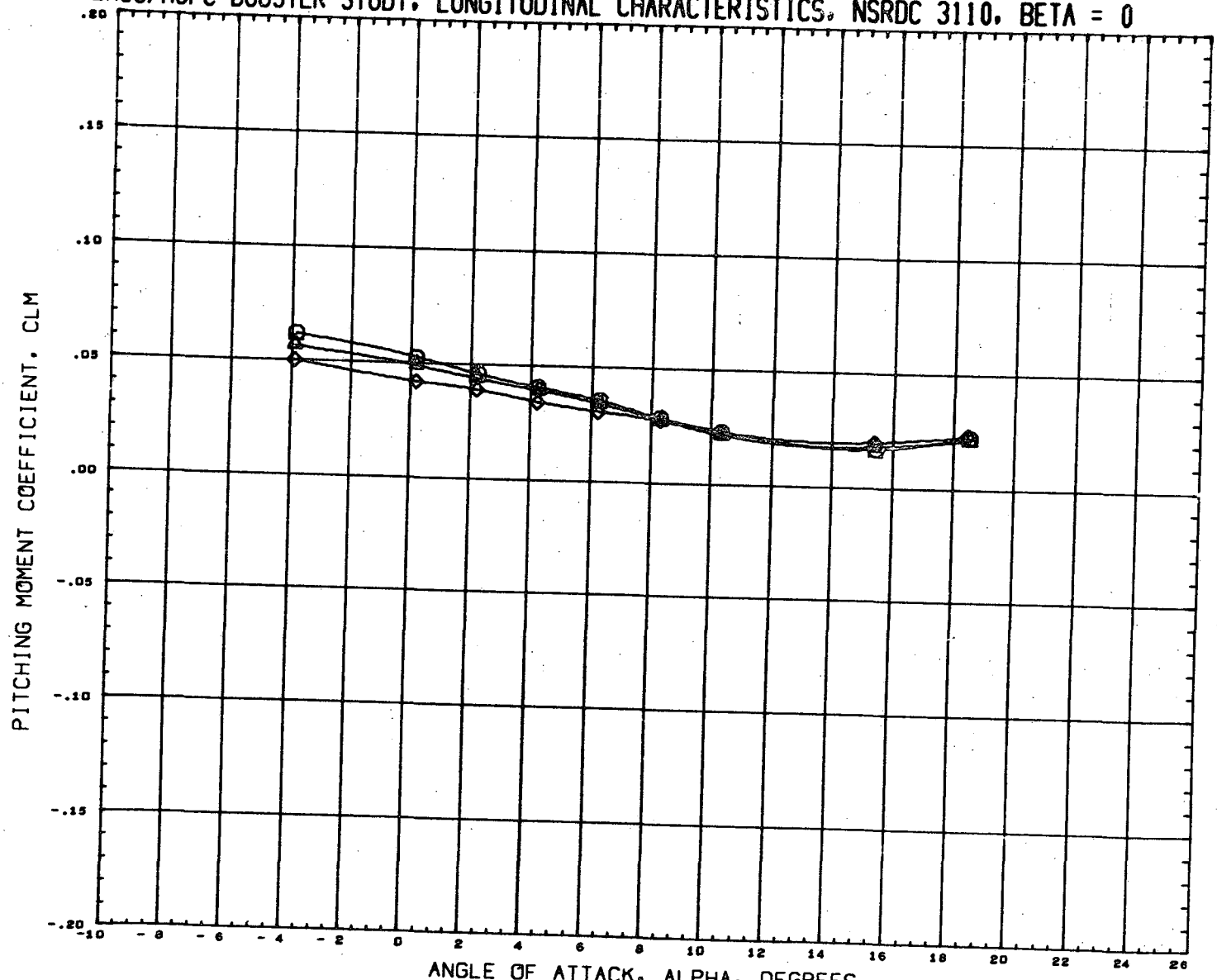
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	-10.000	1.000
10.000	0.000	-10.000	1.000
20.000	0.000	-10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.380

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2341) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2397) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2401) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

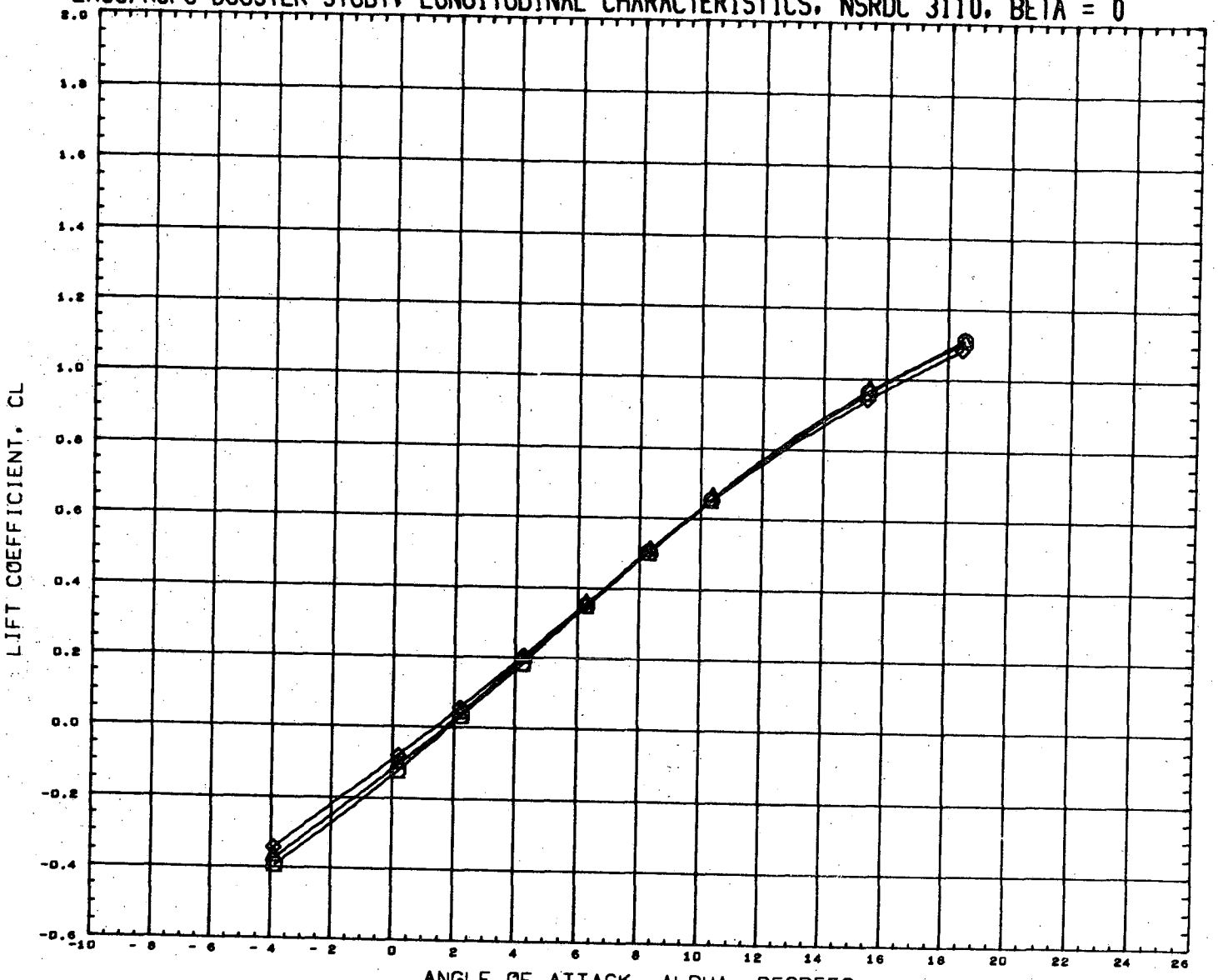
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	-10.000	1.000
10.000	0.000	-10.000	1.000
20.000	0.000	-10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.360

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2341)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2397)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2401)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

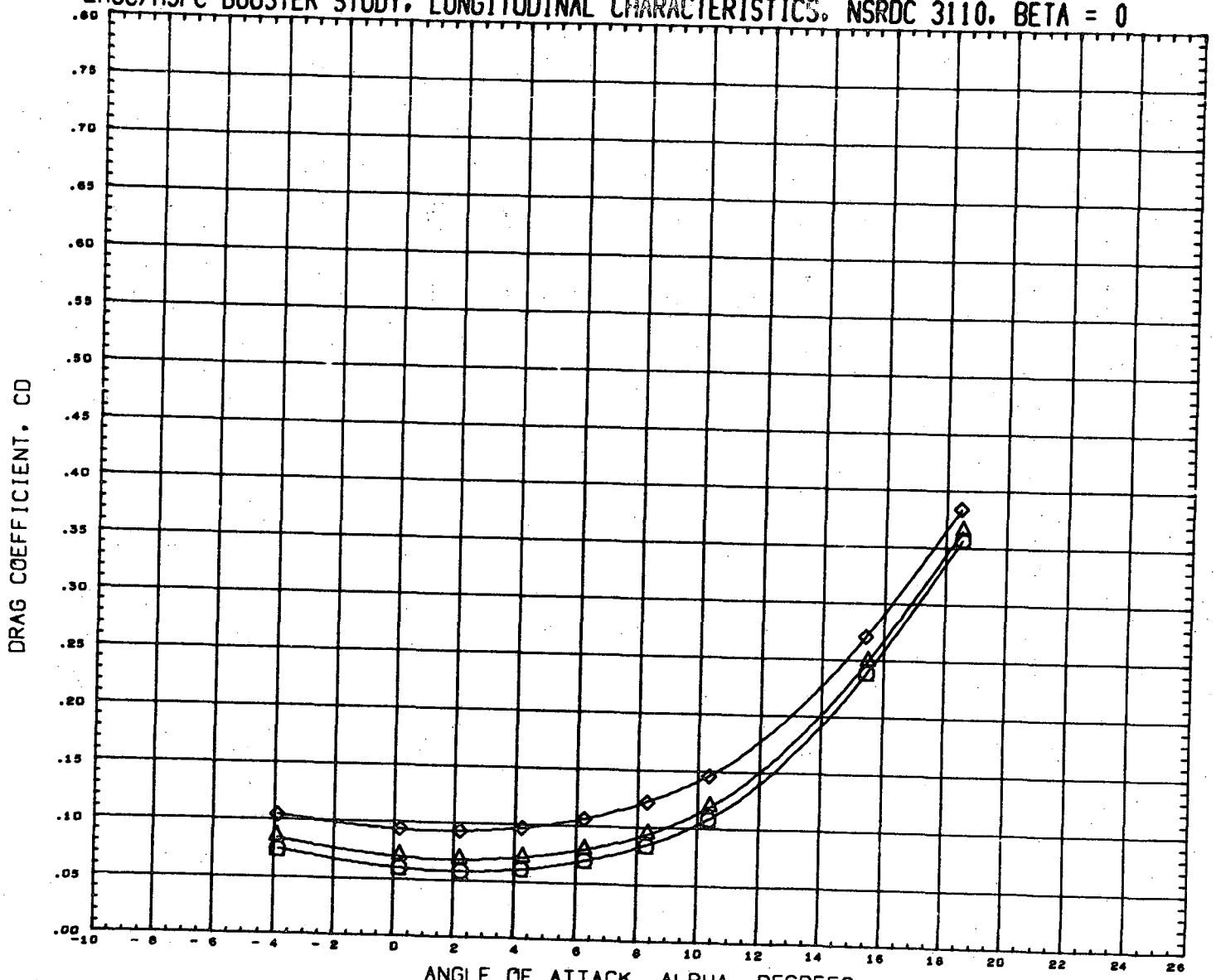
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	-10.000	1.000
10.000	0.000	-10.000	1.000
20.000	0.000	-10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.380

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2341)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2397)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2401)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

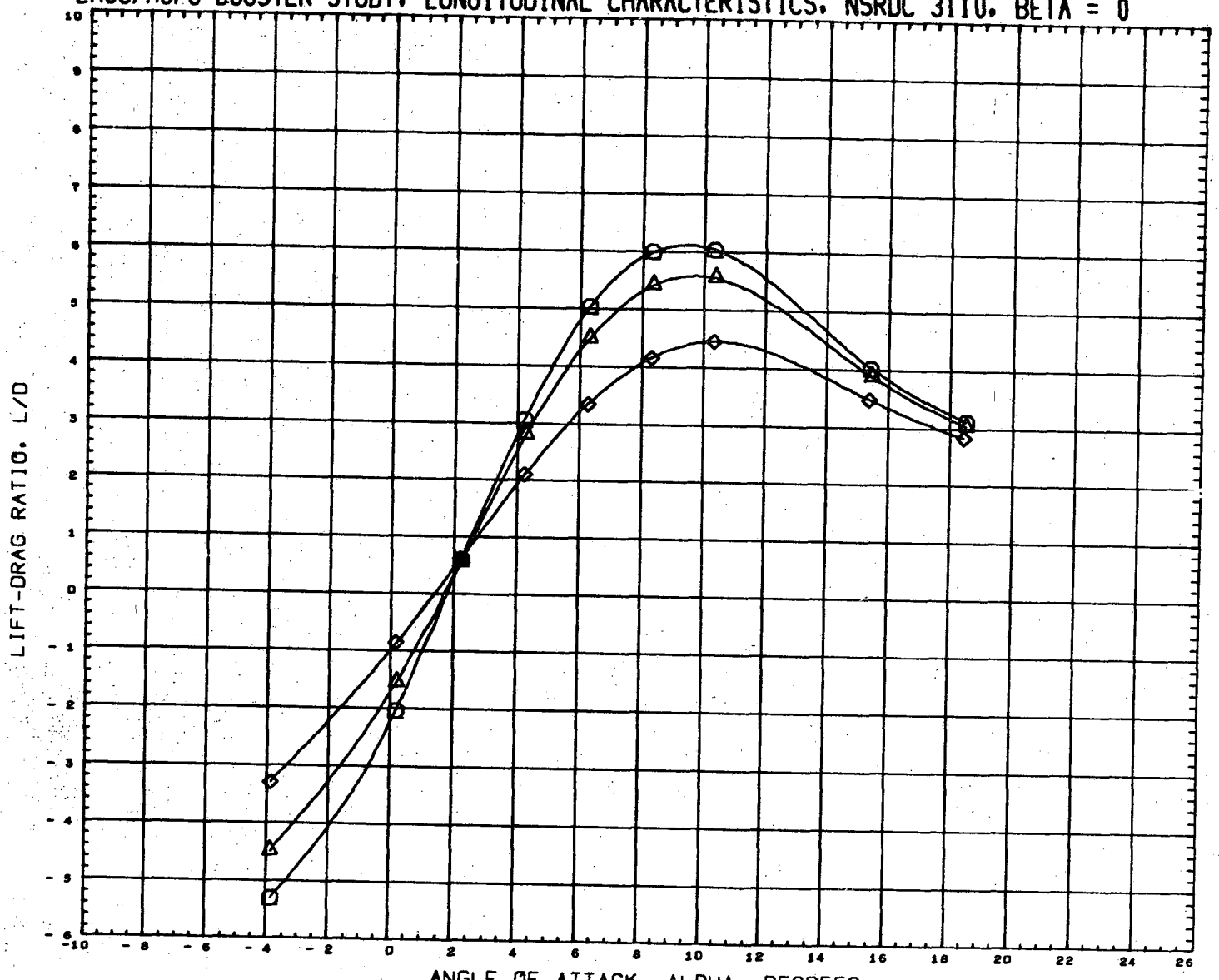
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	-10.000	1.000
10.000	0.000	-10.000	1.000
20.000	0.000	-10.000	1.000

MACH 0.380

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

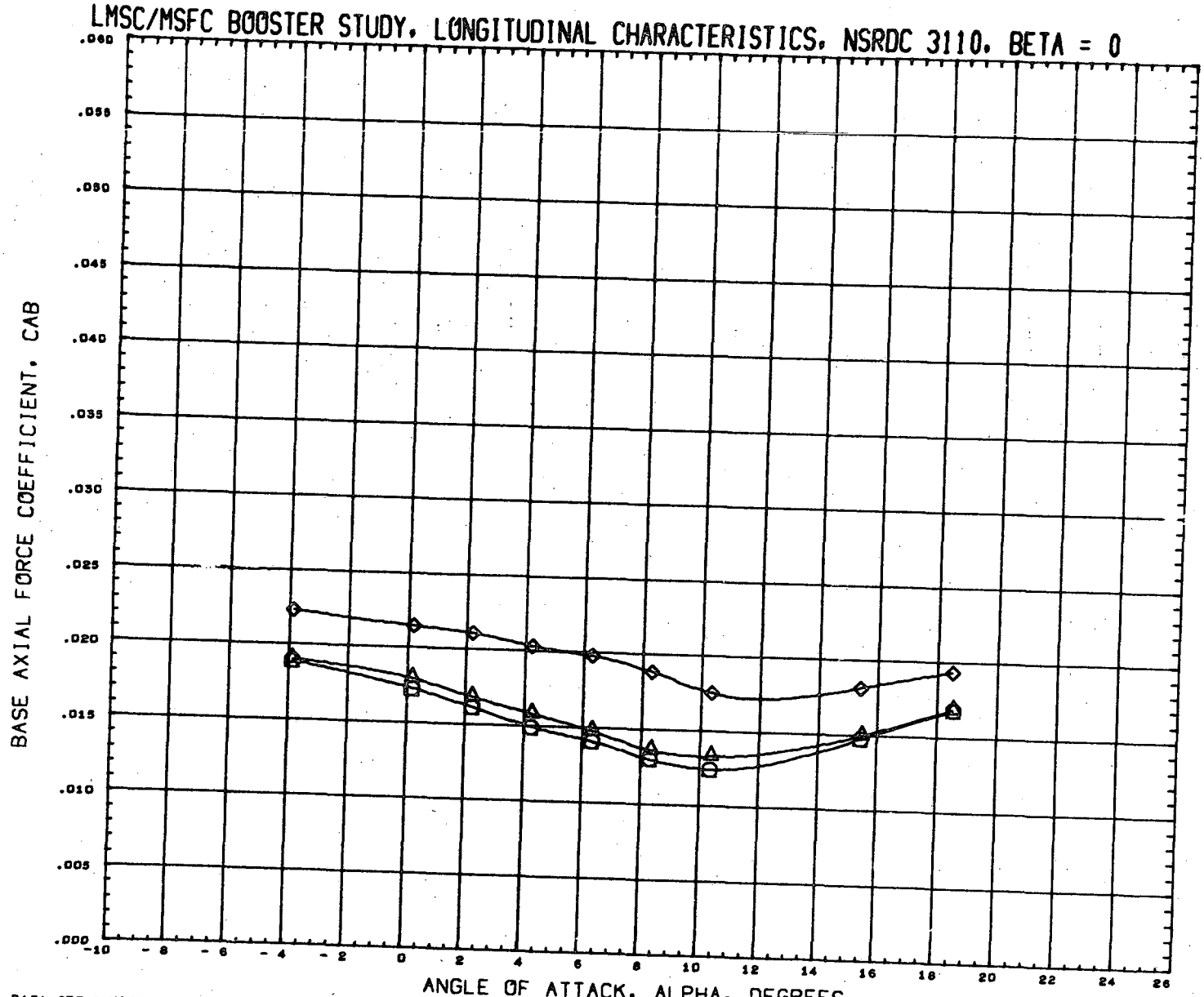


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2341)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2397)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2401)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	-10.000	1.000
10.000	0.000	-10.000	1.000
20.000	0.000	-10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.380



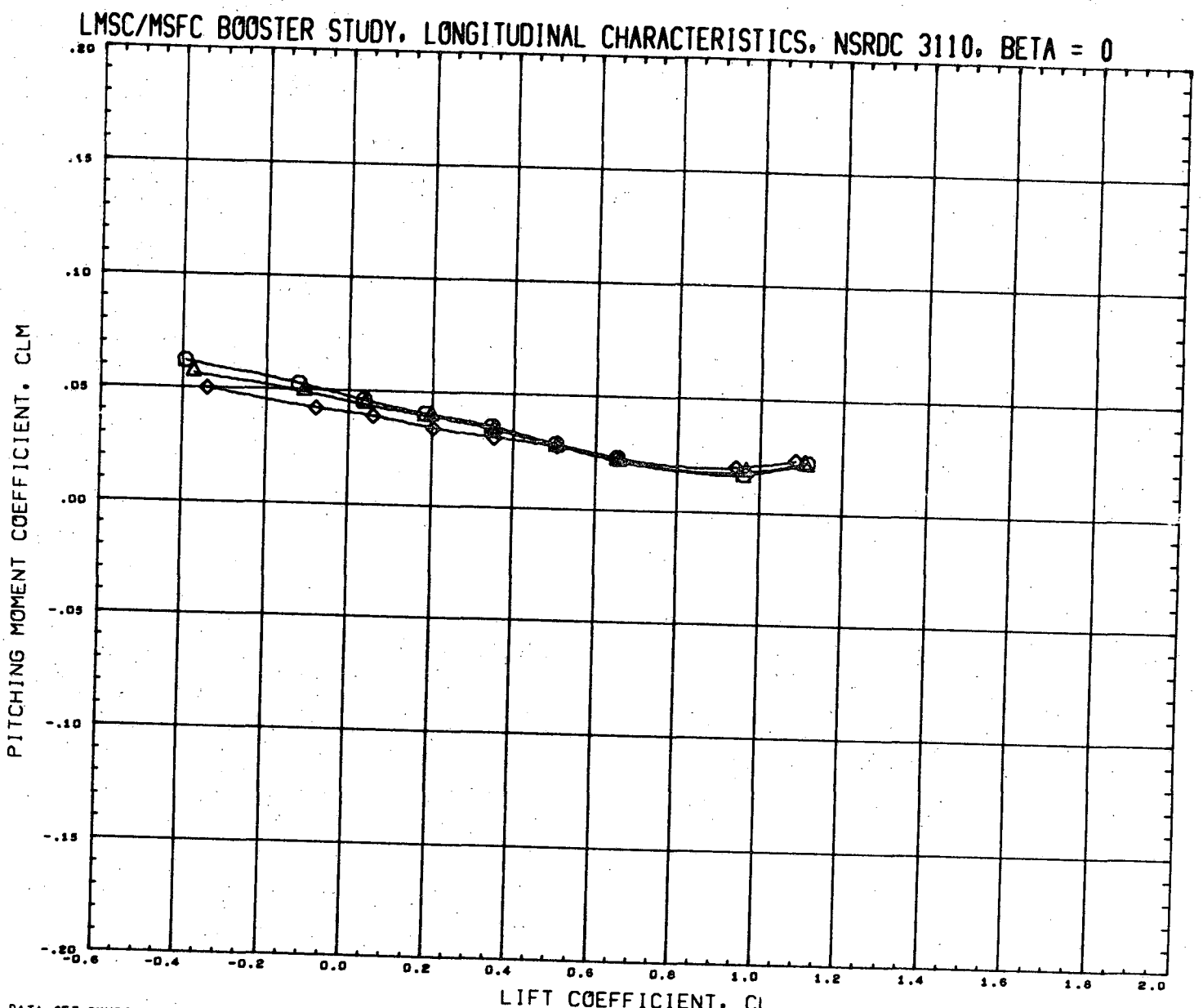
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2341)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2397)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2401)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.360

AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	-10.000	1.000
10.000	0.000	-10.000	1.000
20.000	0.000	-10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



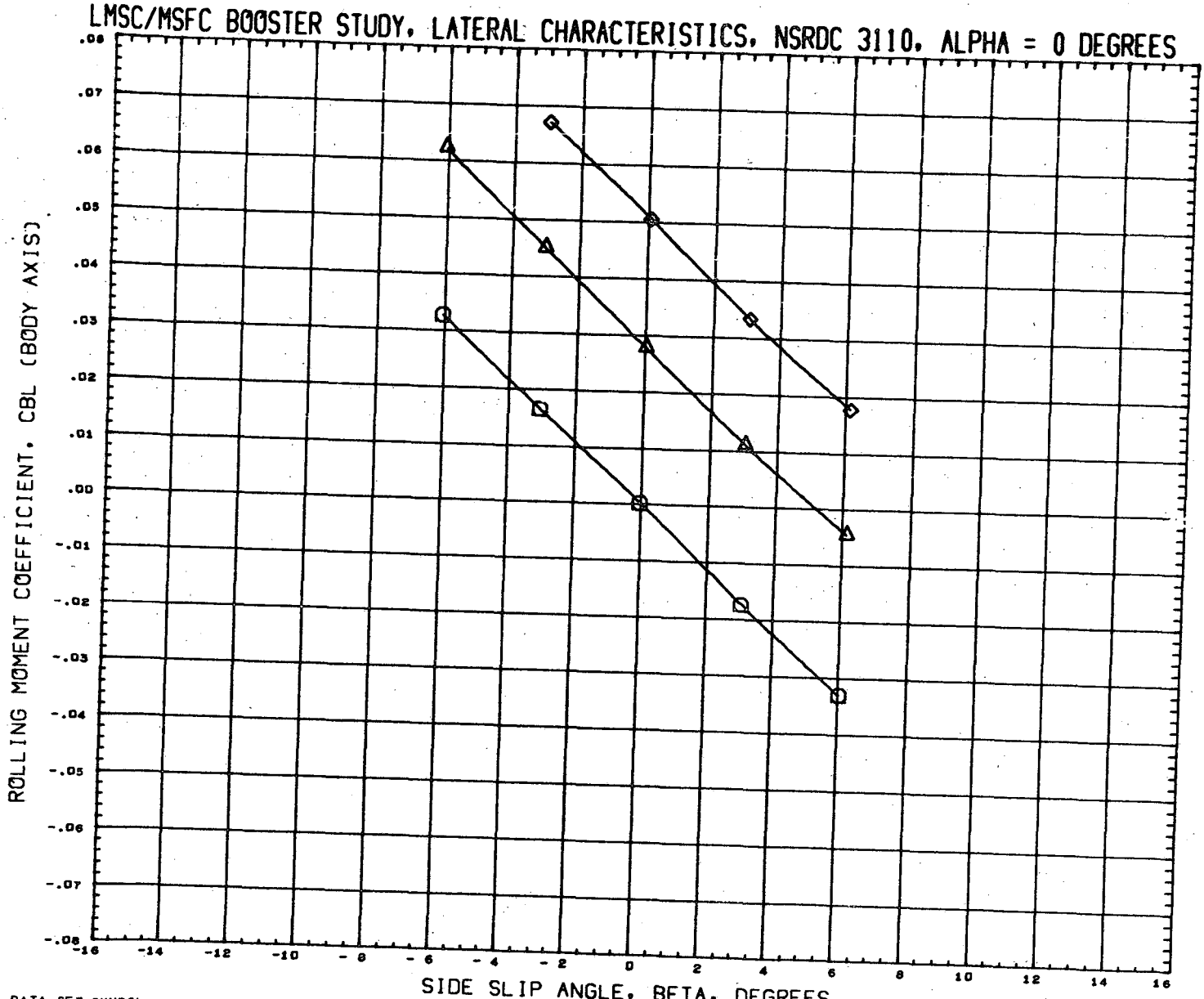
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2341)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2397)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2401)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.360

AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	-10.000	1.000
10.000	0.000	-10.000	1.000
20.000	0.000	-10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2342) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2398) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2402) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

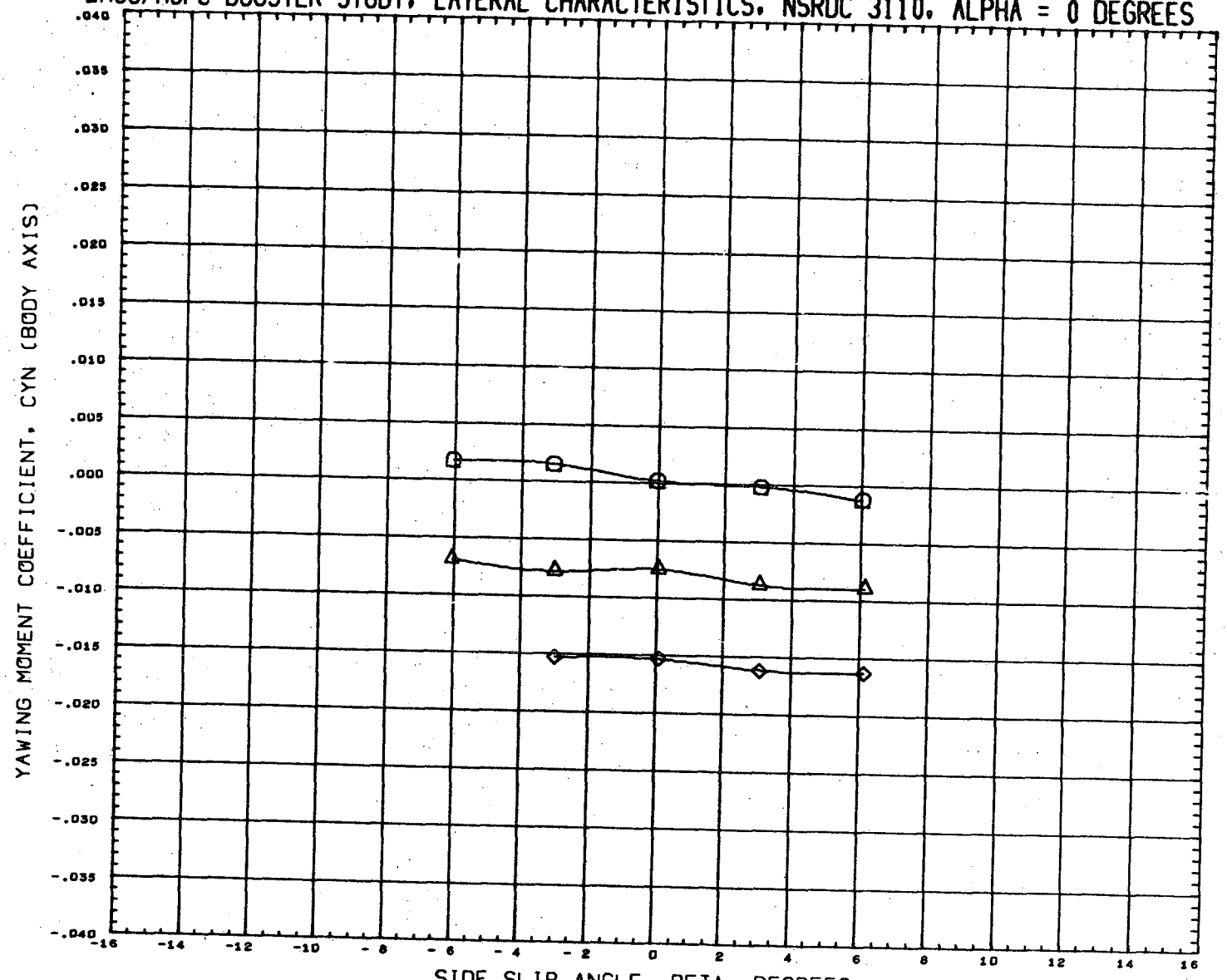
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	-10.000	1.000
10.000	0.000	-10.000	1.000
20.000	0.000	-10.000	1.000

MACH 0.379

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES

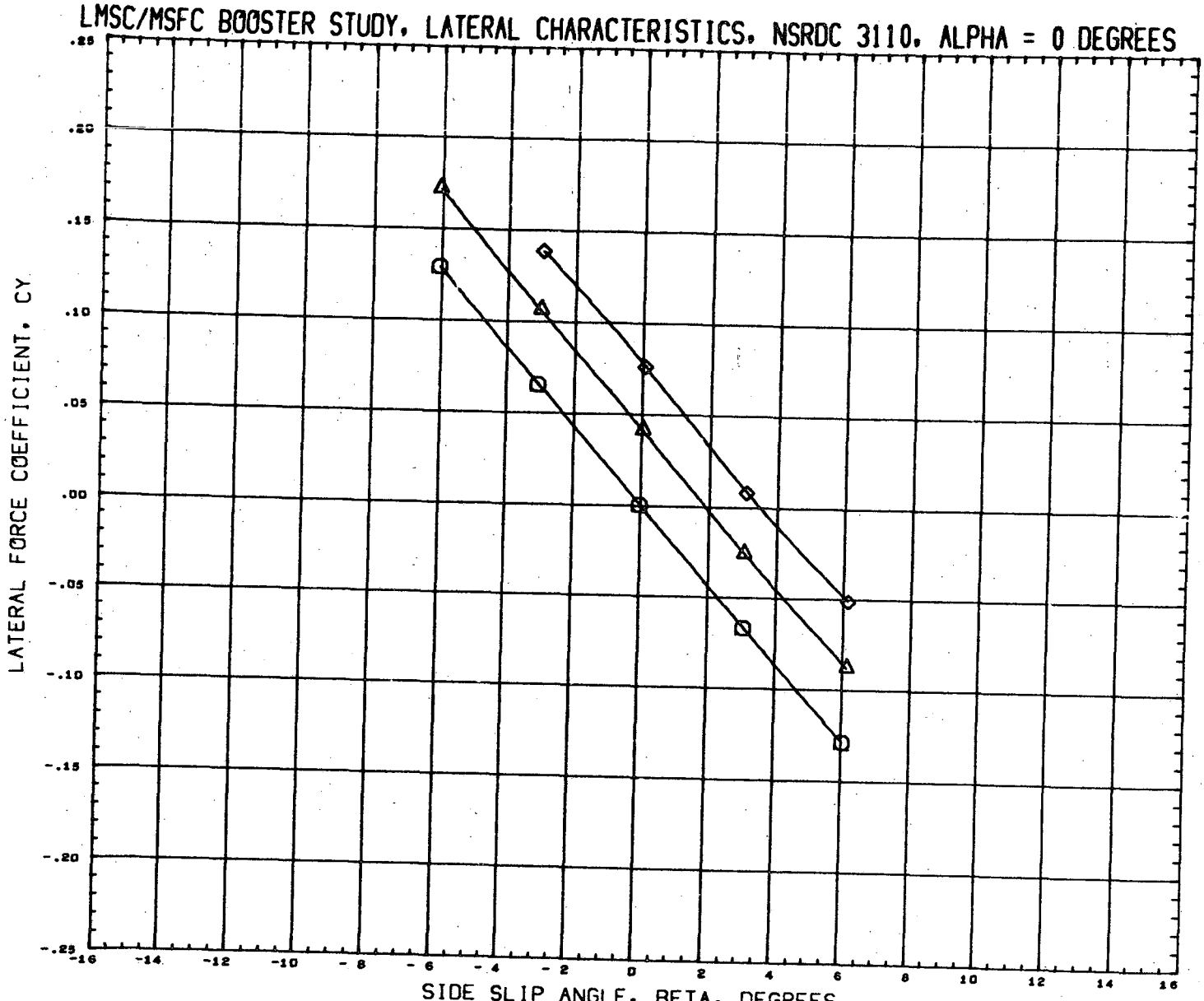


DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2342)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2398)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2402)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	-10.000	1.000
10.000	0.000	-10.000	1.000
20.000	0.000	-10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2342)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2398)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2402)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

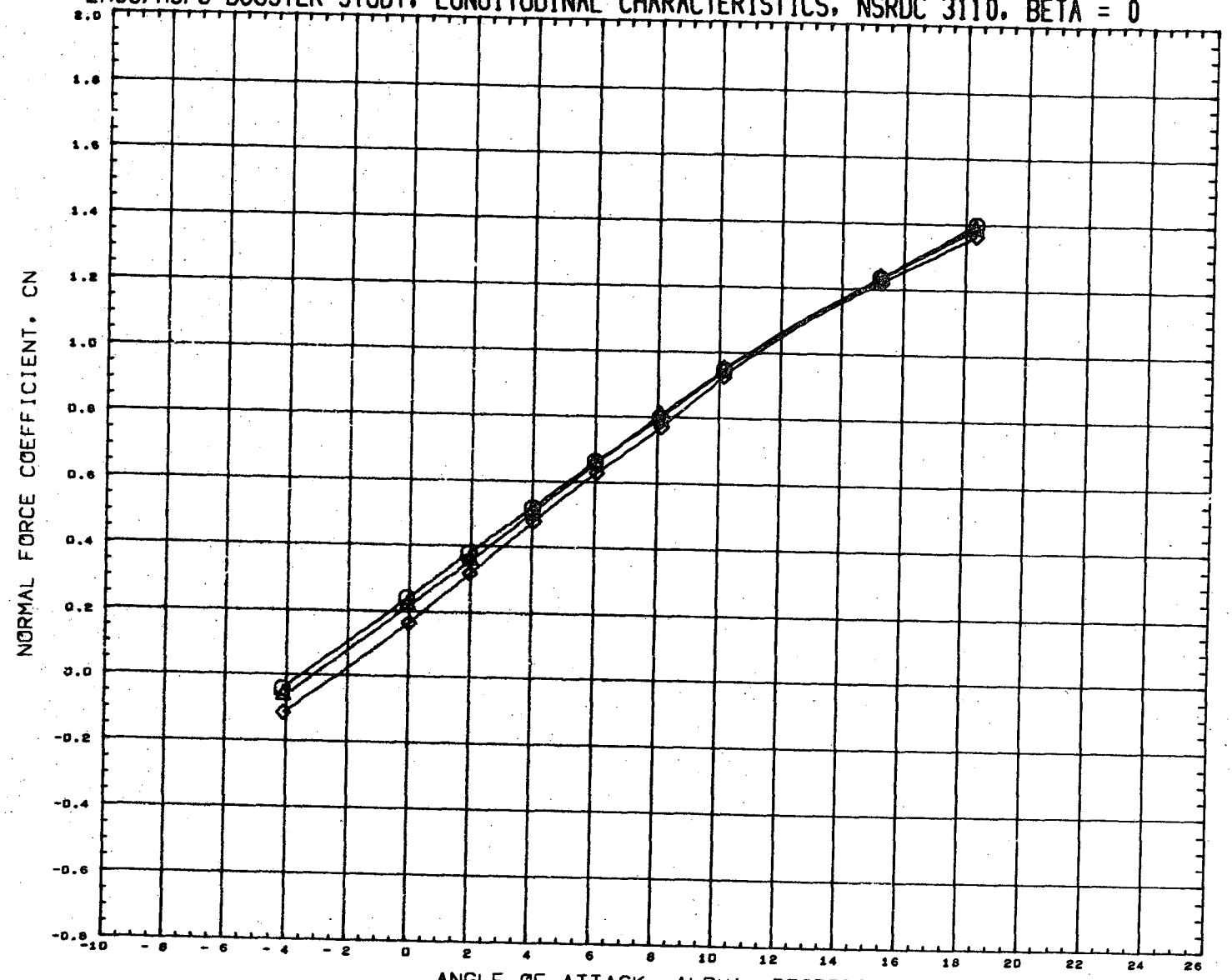
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	-10.000	1.000
10.000	0.000	-10.000	1.000
20.000	0.000	-10.000	1.000

MACH 0.379

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



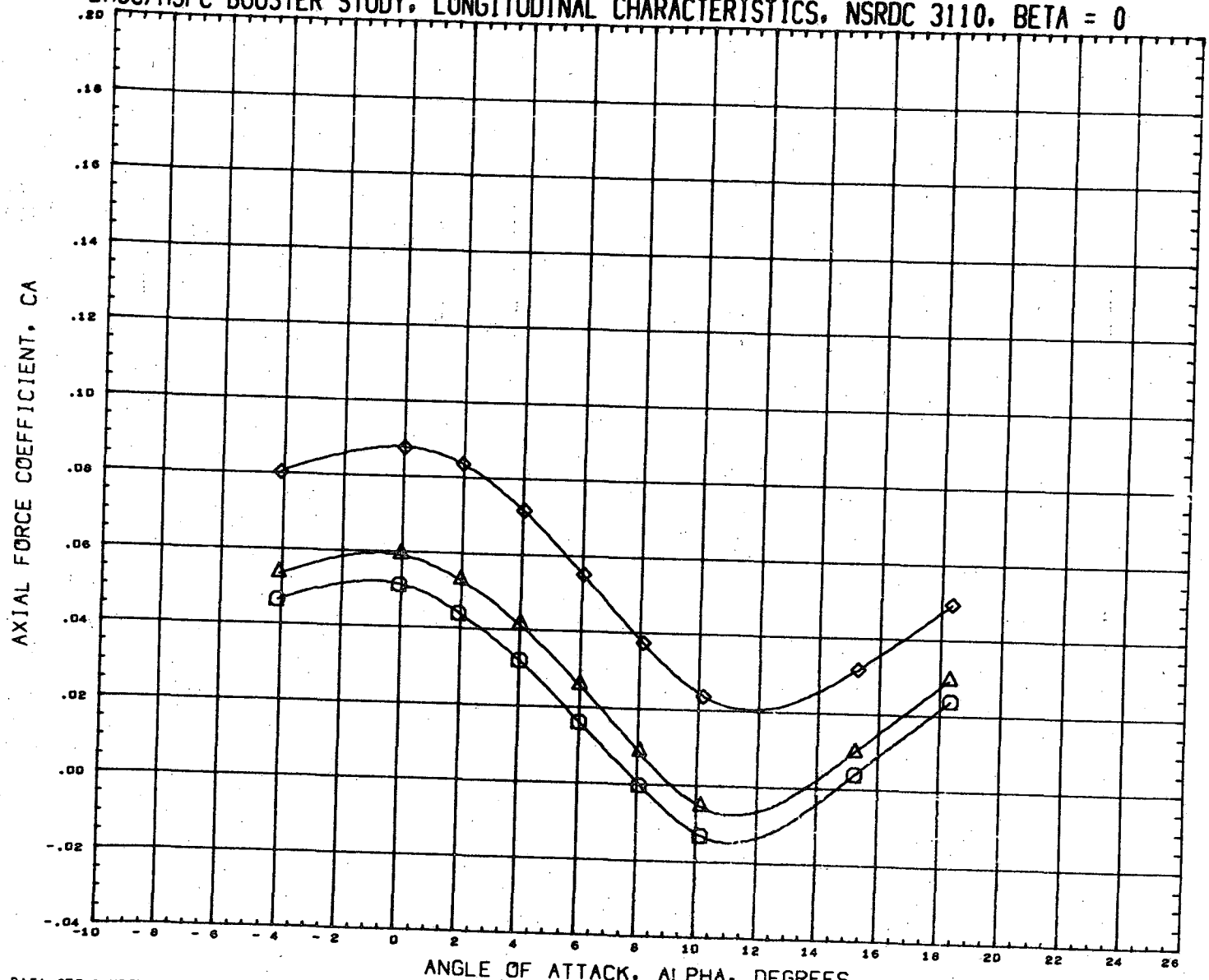
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2353)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2405)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2409)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	10.000	1.000
10.000	0.000	10.000	1.000
20.000	0.000	10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2353) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2405) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2409) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

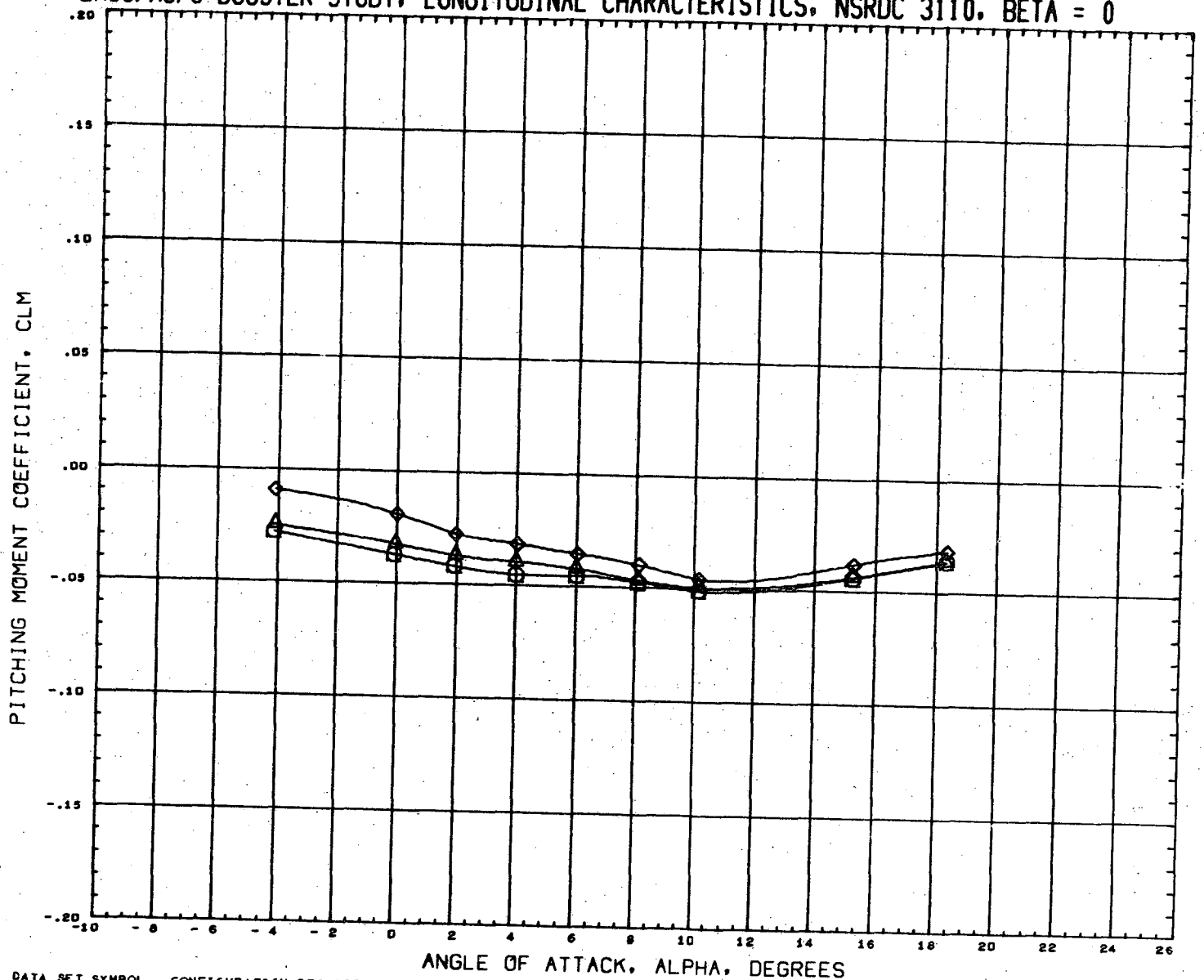
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	10.000	1.000
10.000	0.000	10.000	1.000
20.000	0.000	10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2353) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2405) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2409) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

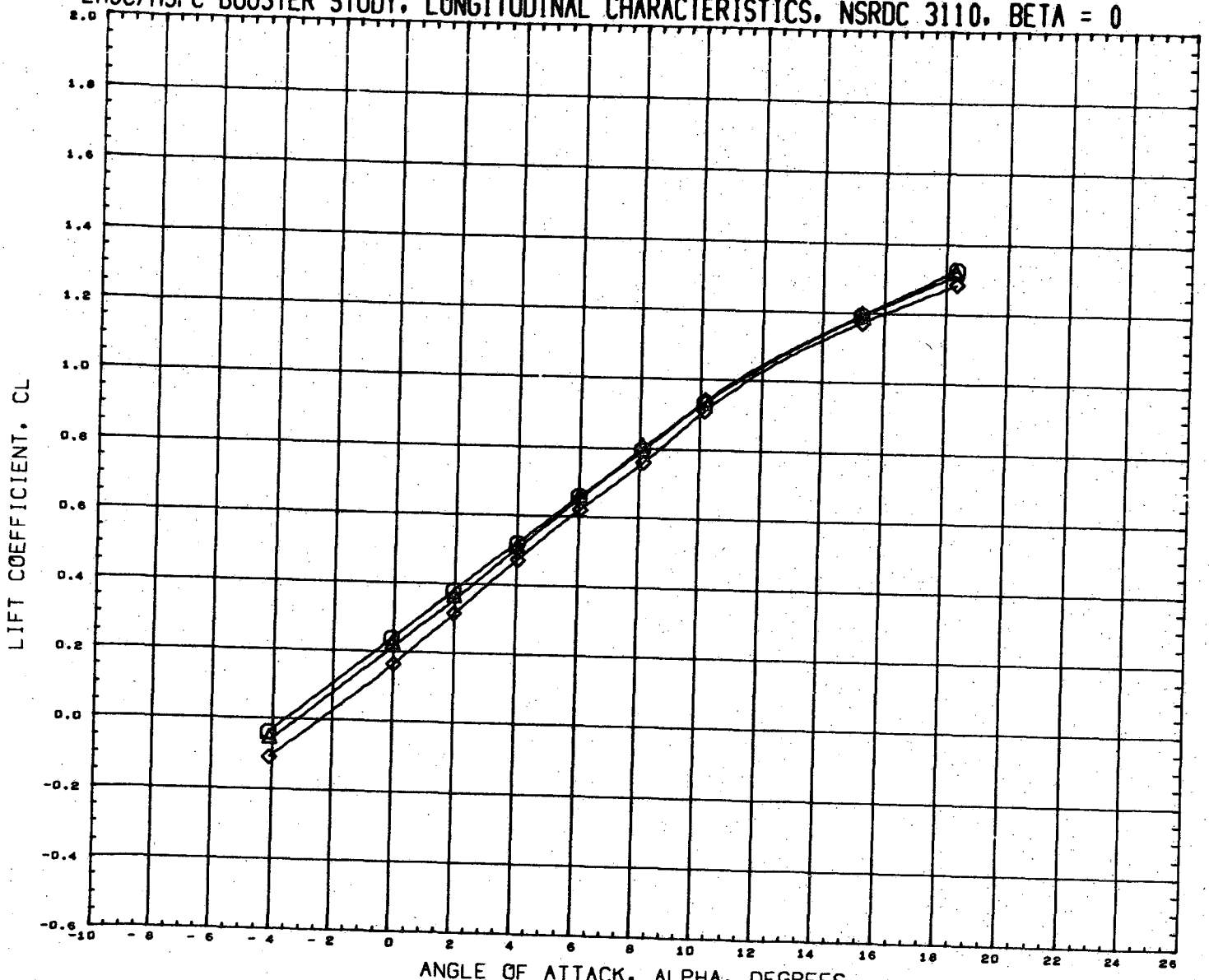
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	10.000	1.000
10.000	0.000	10.000	1.000
20.000	0.000	10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



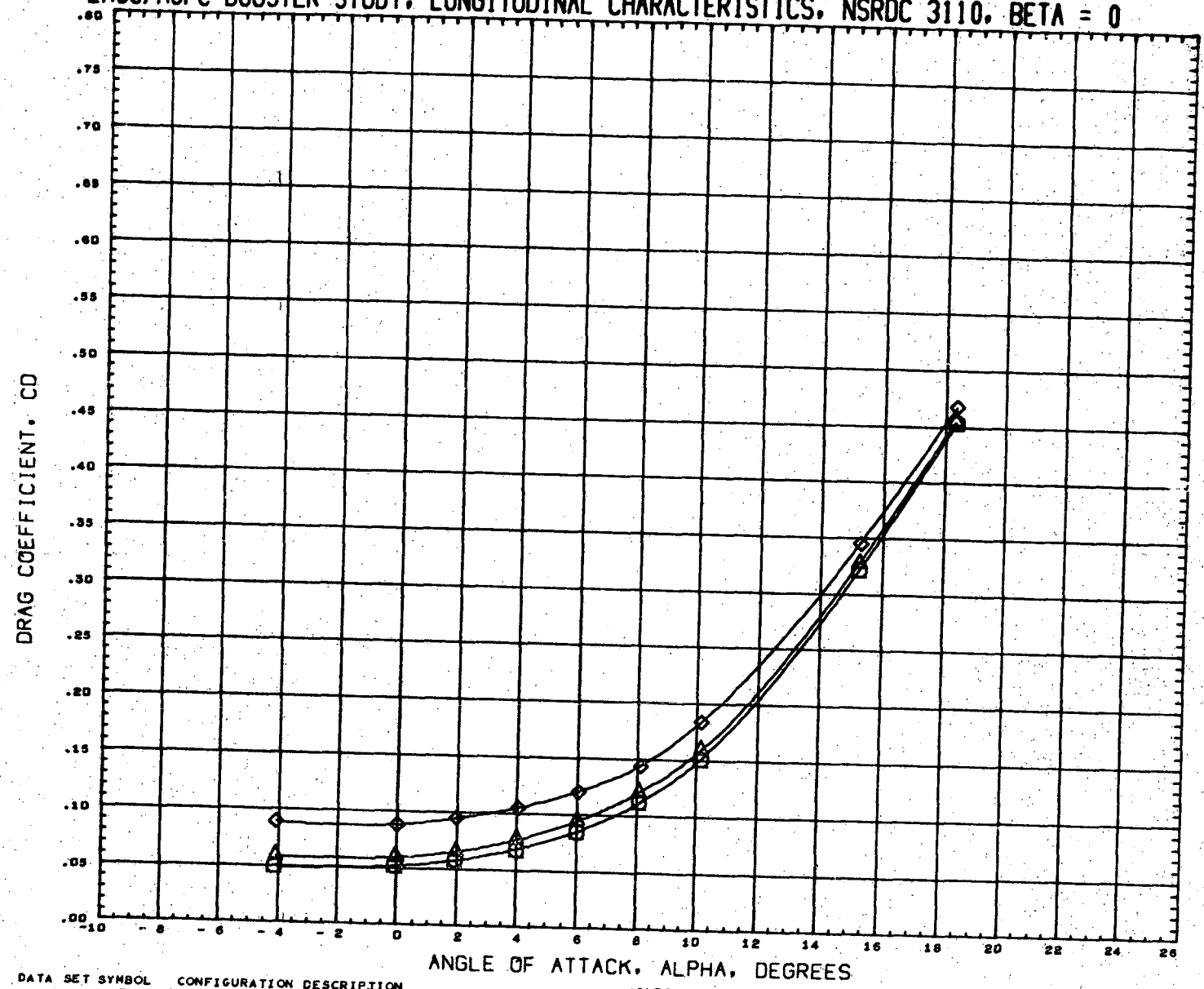
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2353)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2405)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2409)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.379

AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	10.000	1.000
10.000	0.000	10.000	1.000
20.000	0.000	10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



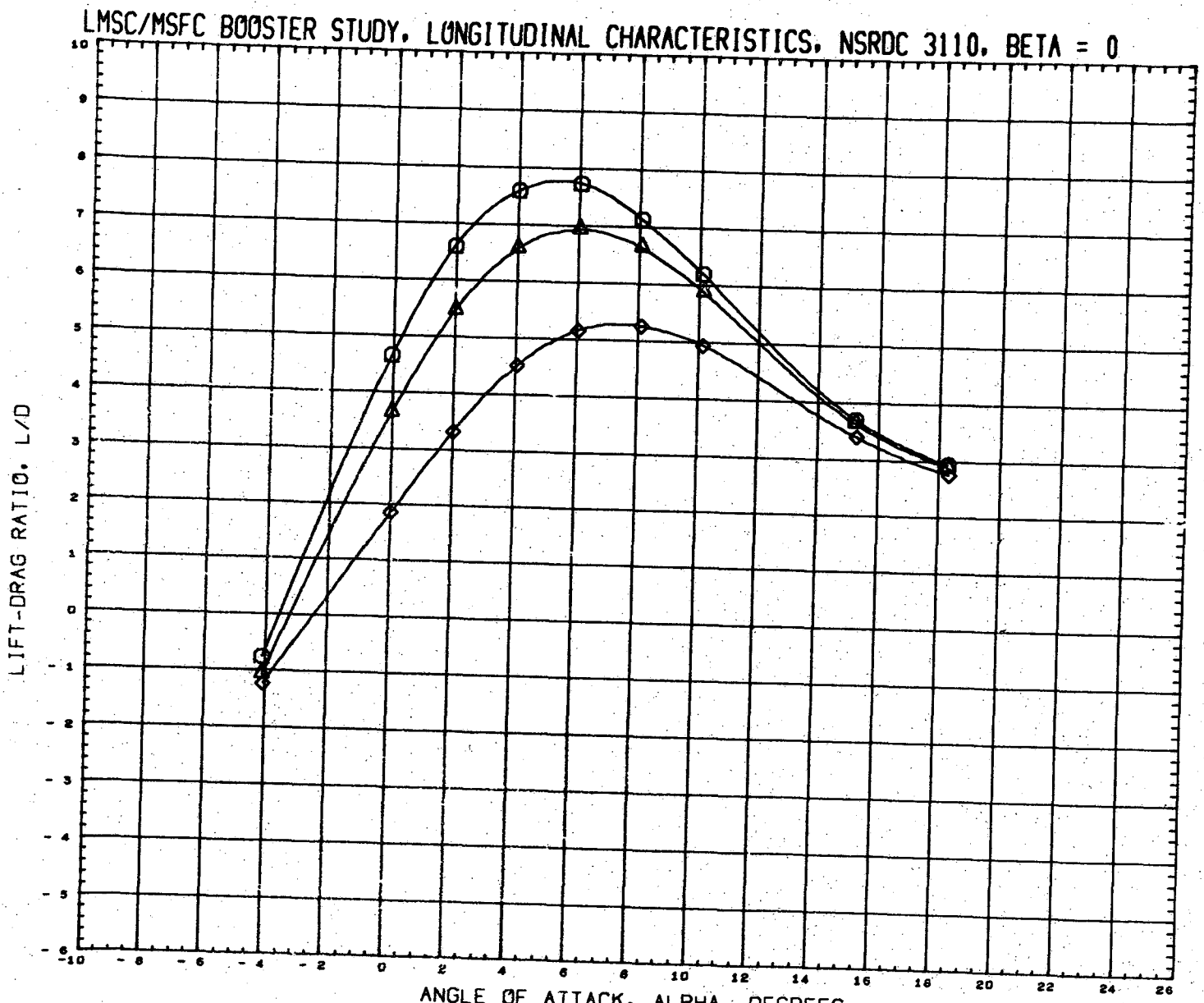
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2353)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2405)	☒	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2409)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDFOS
0.000	0.000	10.000	1.000
10.000	0.000	10.000	1.000
20.000	0.000	10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2353)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2405)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2409)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

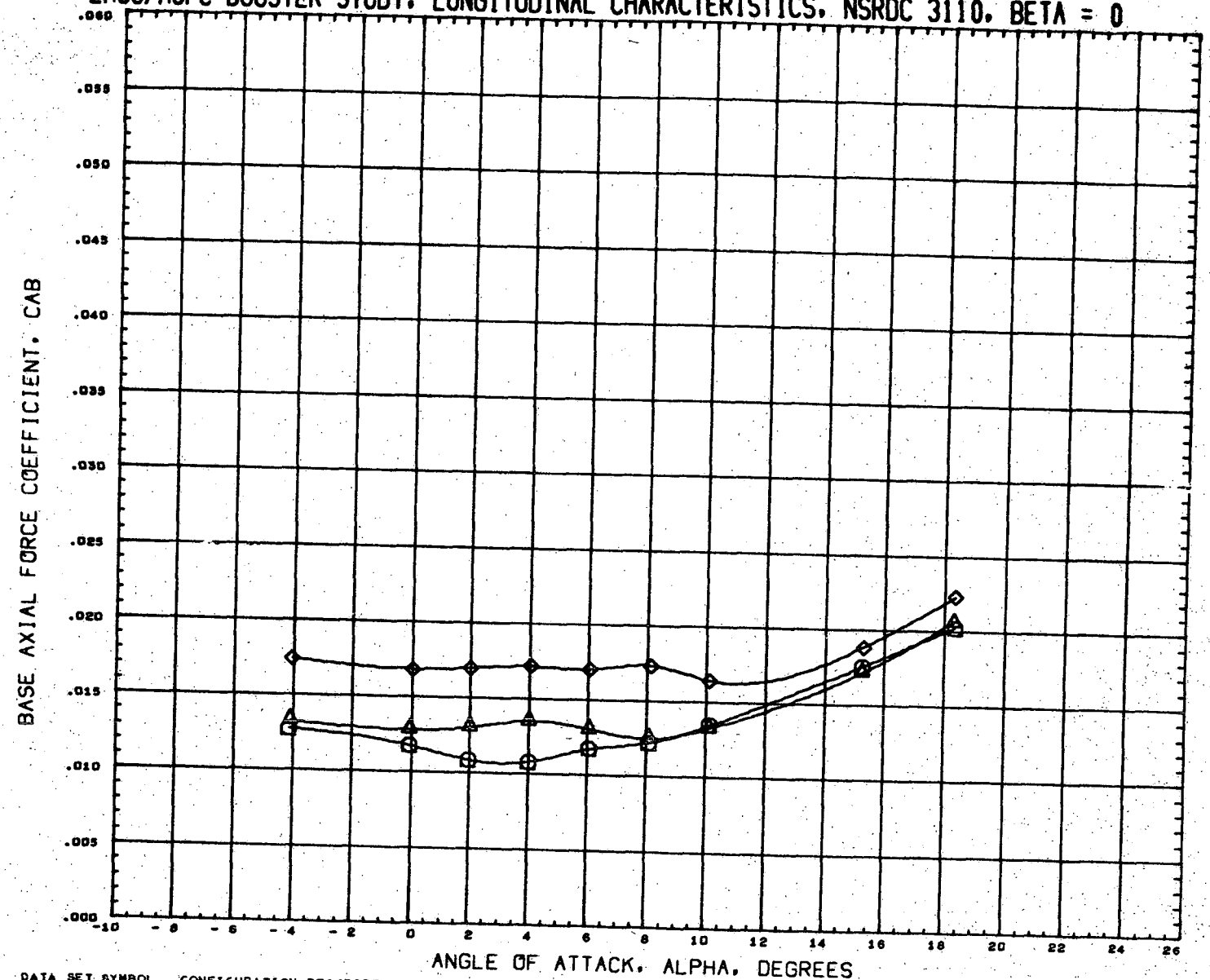
AILRON	CANARD	ELEVTR	CNDFOS
0.000	0.000	10.000	1.000
10.000	0.000	10.000	1.000
20.000	0.000	10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2353) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2405) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2409) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

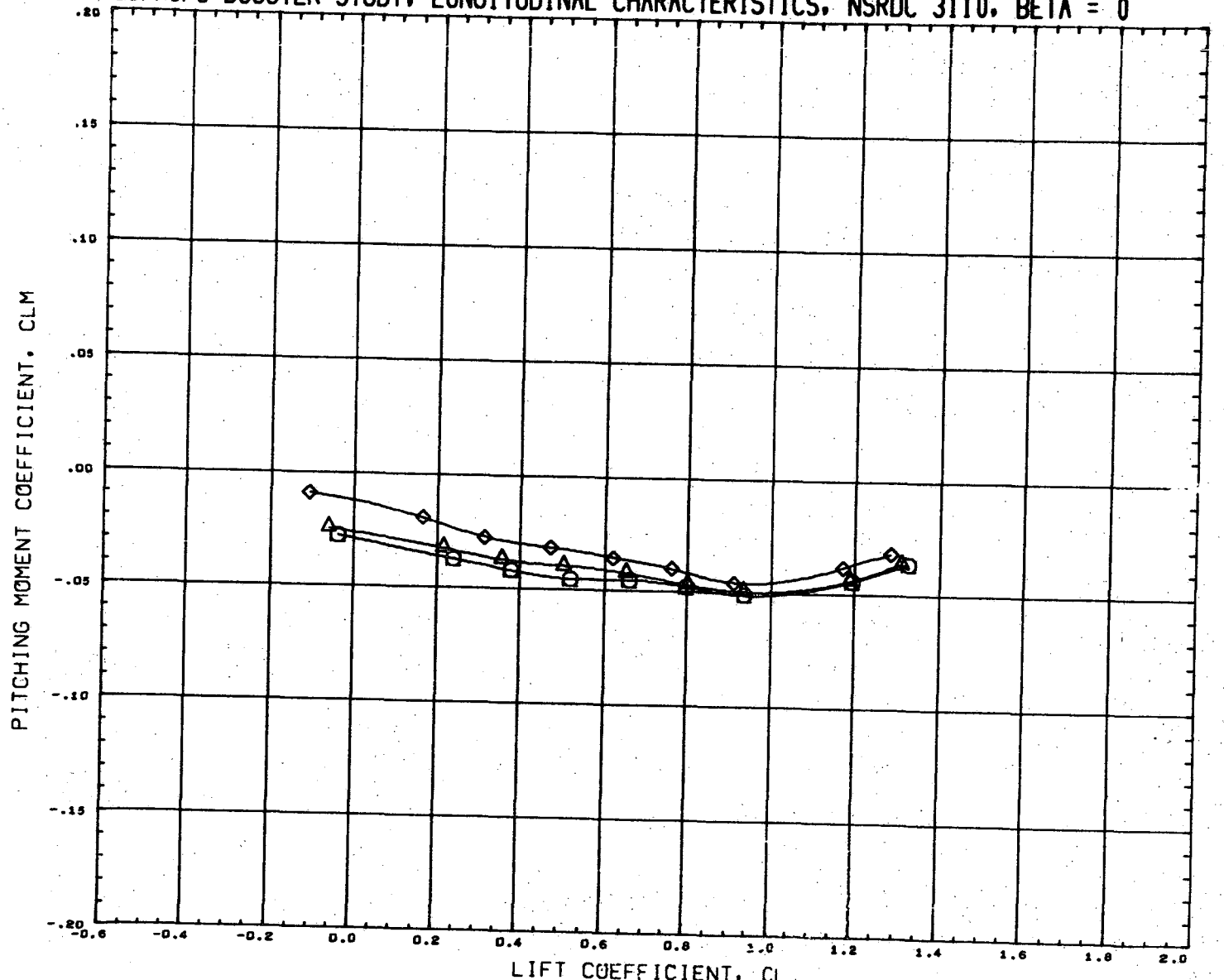
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	10.000	1.000
10.000	0.000	10.000	1.000
20.000	0.000	10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2353)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2405)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2409)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

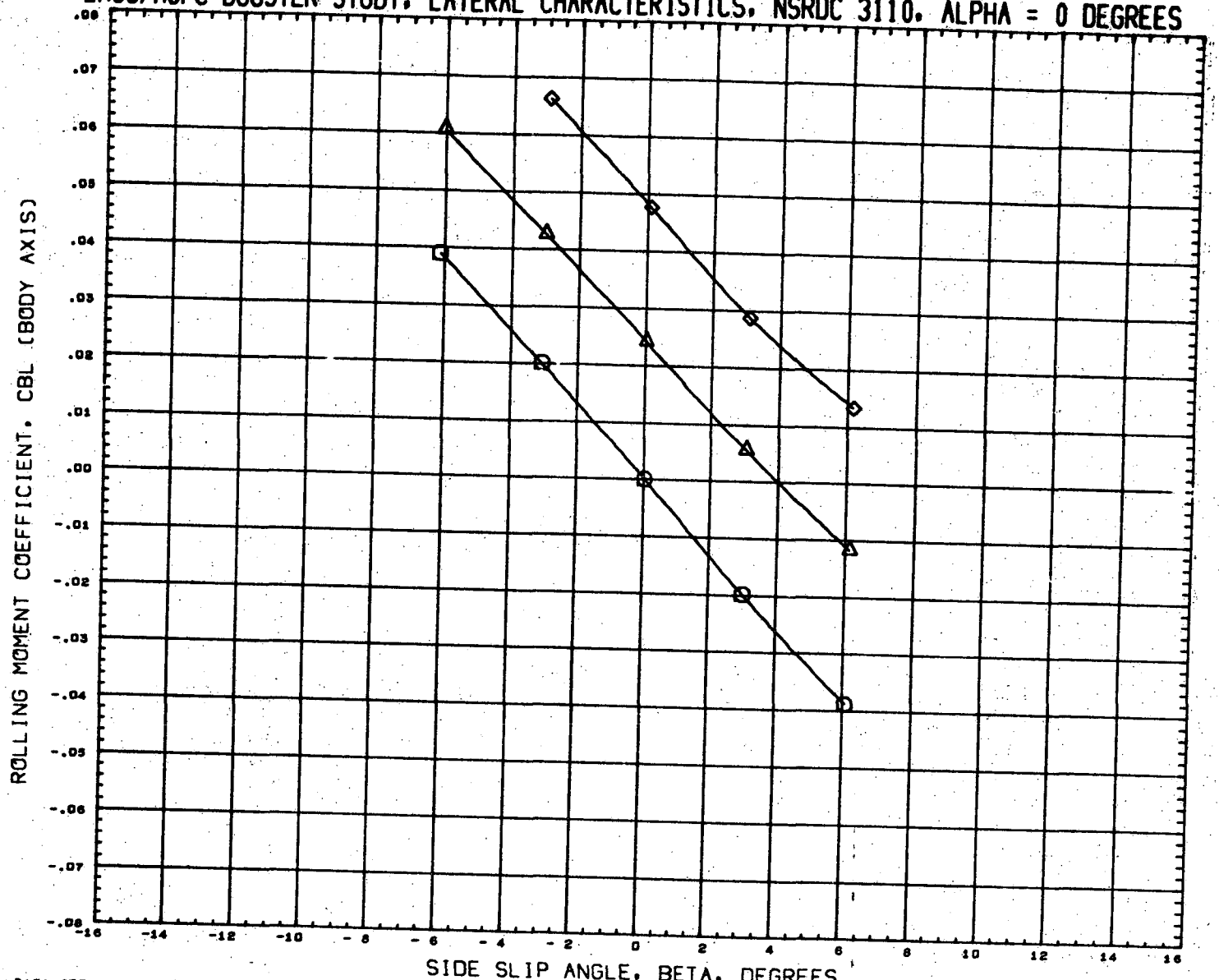
MACH 0.379

AILRON	CANARD	ELEVTR	CNDFOS
0.000	0.000	10.000	1.000
10.000	0.000	10.000	1.000
20.000	0.000	10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES

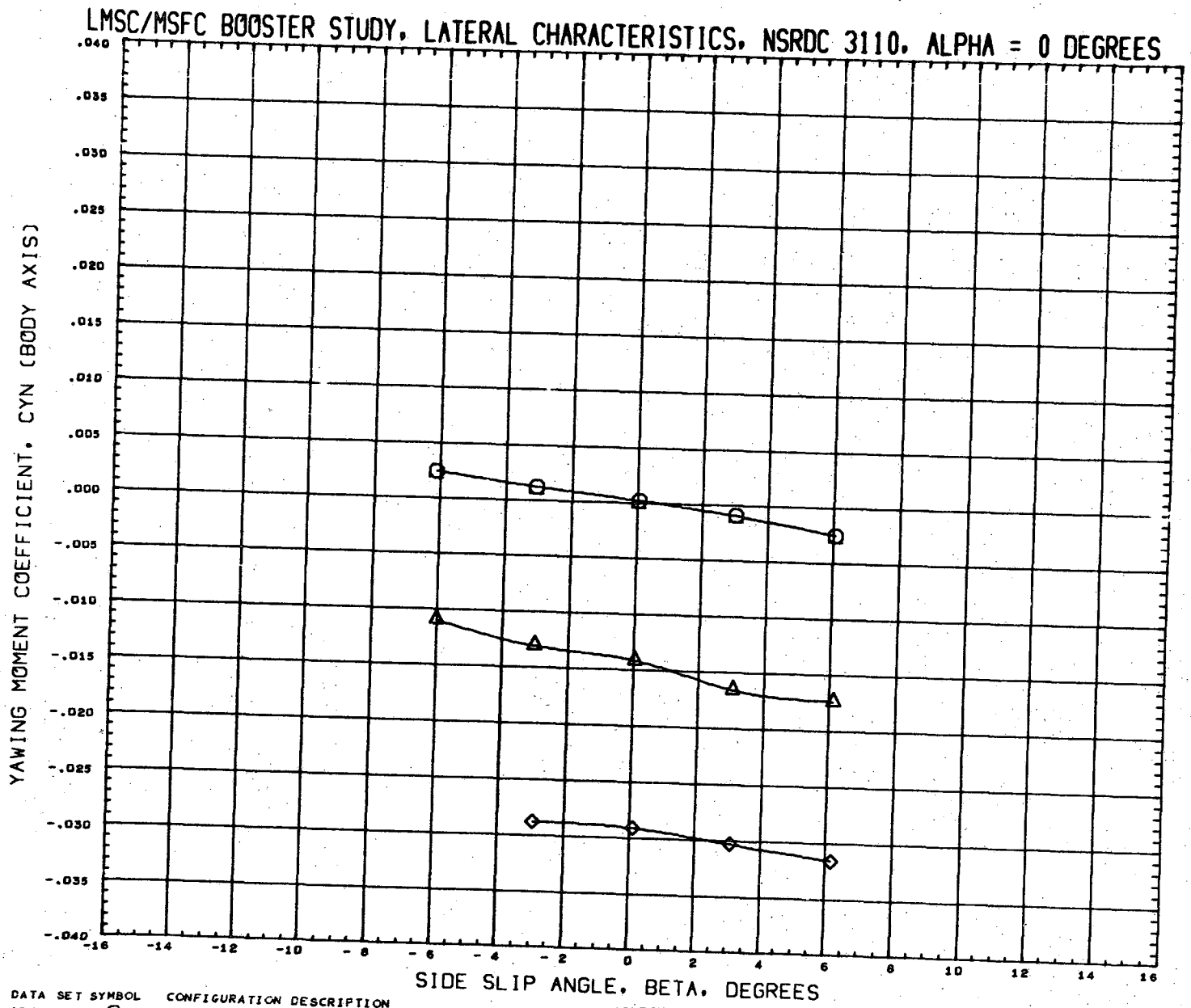


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2354)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2406)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2410)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	10.000	1.000
10.000	0.000	10.000	1.000
20.000	0.000	10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.379



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2354) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2406) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2410) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

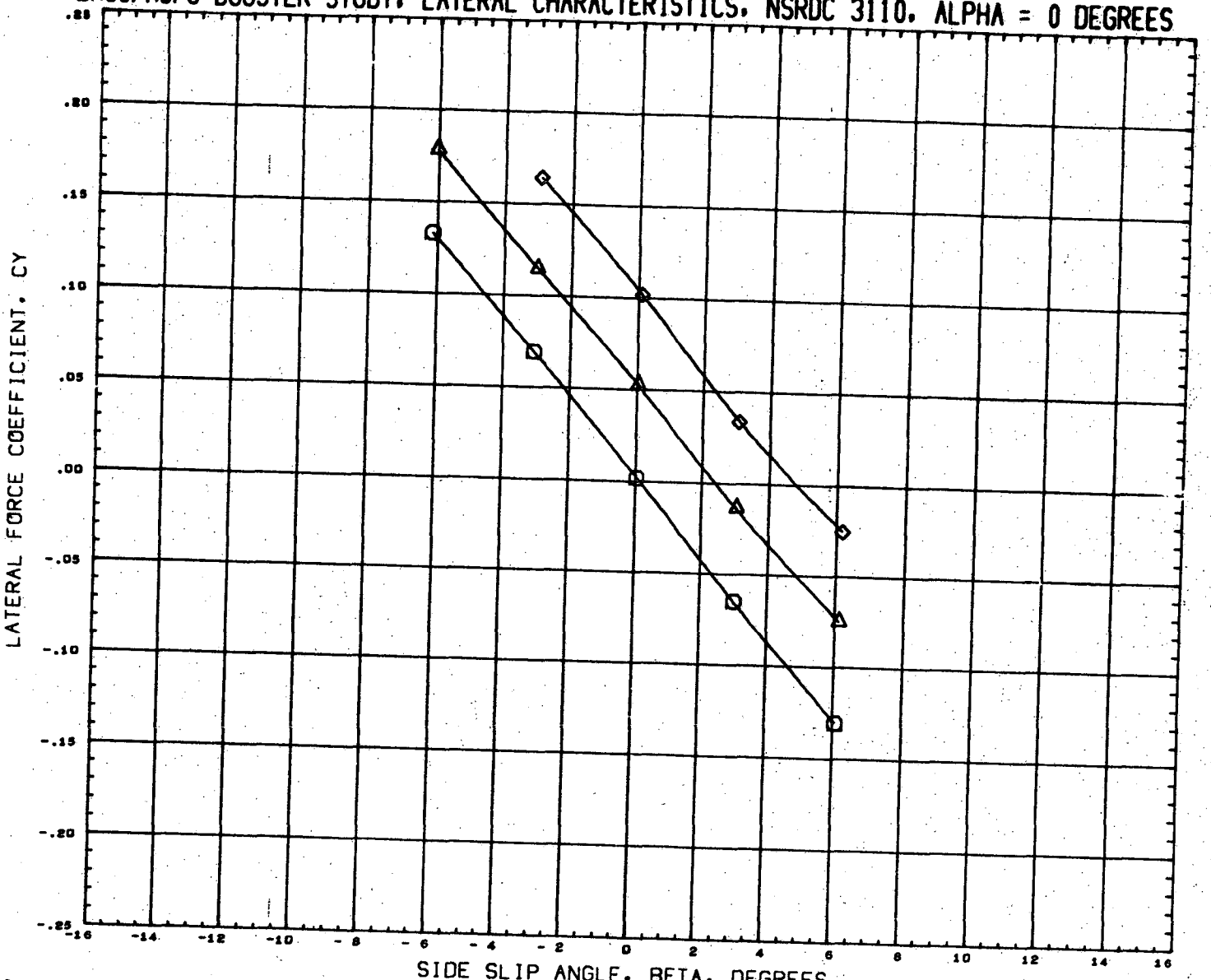
AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	10.000	1.000
10.000	0.000	10.000	1.000
20.000	0.000	10.000	1.000

MACH 0.379

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



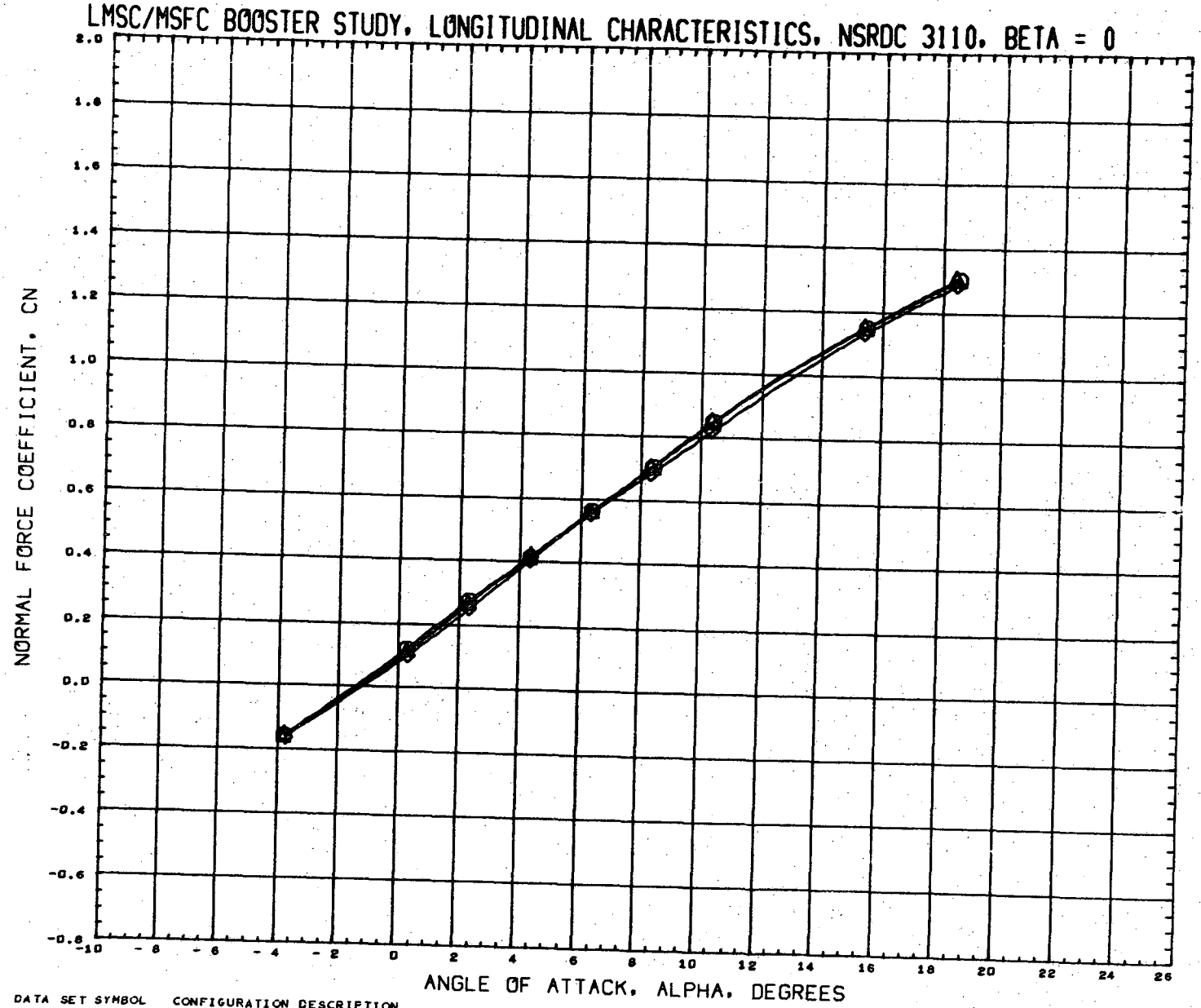
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2354)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1
(RN2406)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2410)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	0.000	10.000	1.000
10.000	0.000	10.000	1.000
20.000	0.000	10.000	1.000

MACH 0.379

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2325) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2413) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2417) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	0.000	1.000
10.000	20.000	0.000	1.000
20.000	20.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2325) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2413) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2417) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

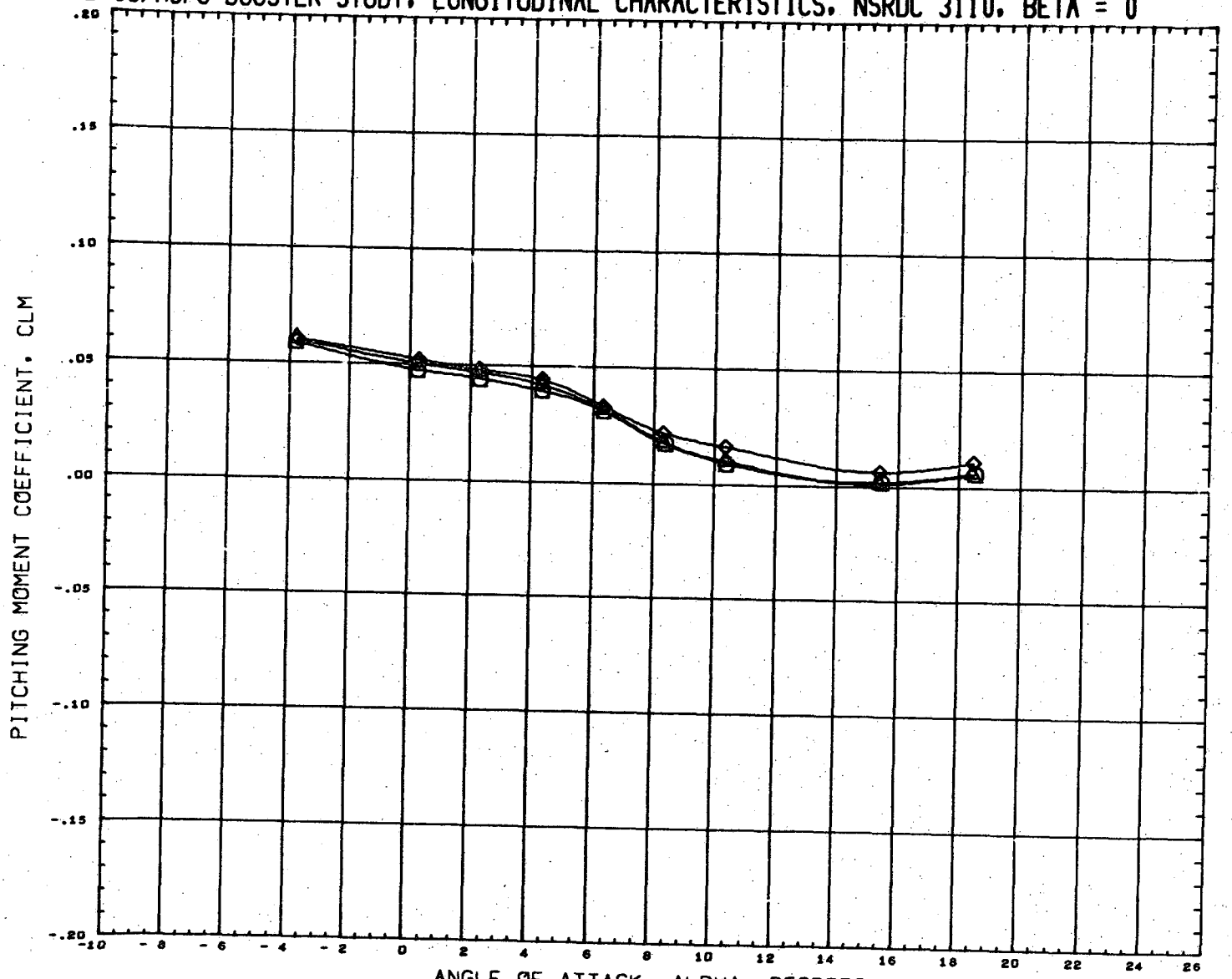
AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	0.000	1.000
10.000	20.000	0.000	1.000
20.000	20.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



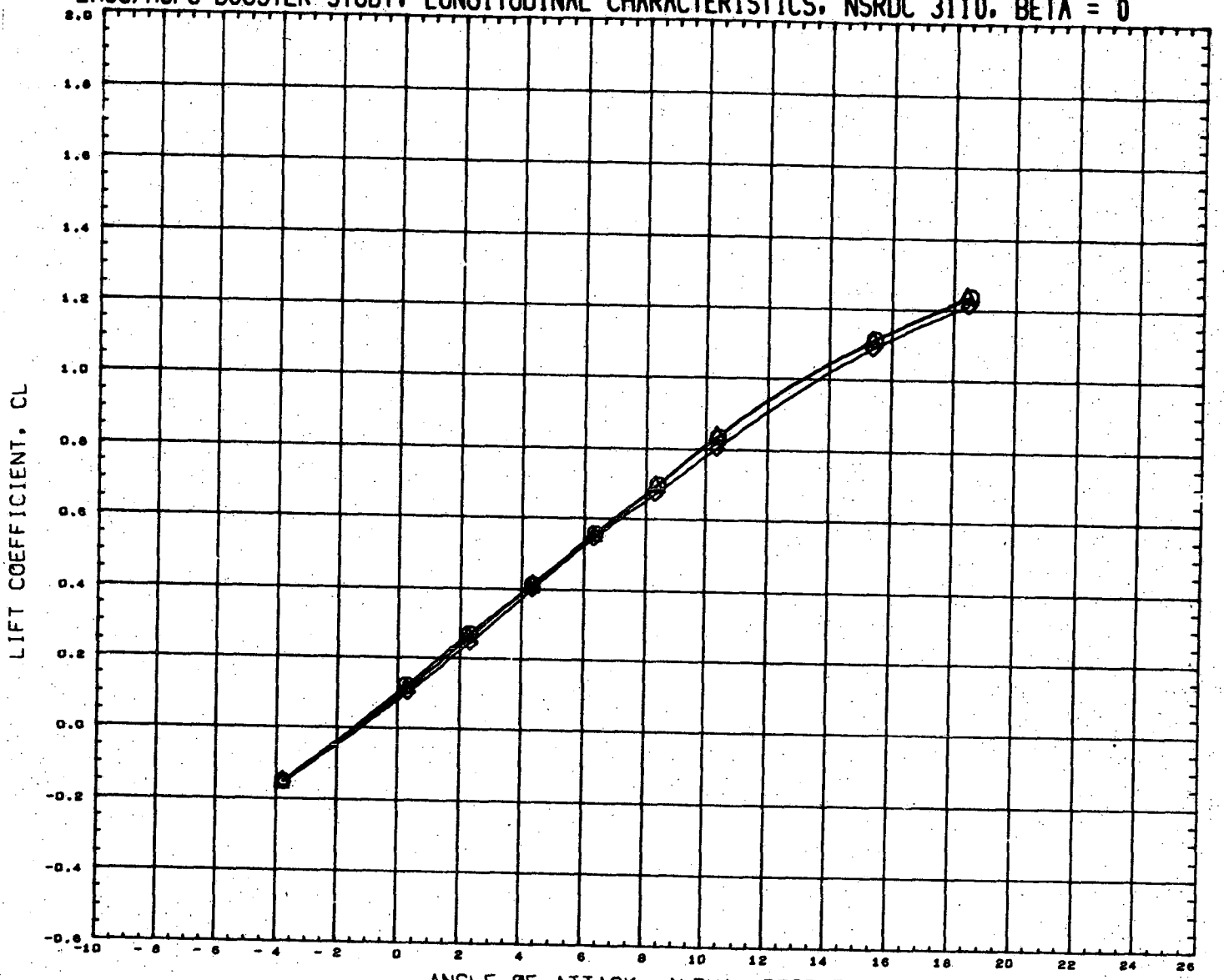
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2325)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2413)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2417)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	0.000	1.000
10.000	20.000	0.000	1.000
20.000	20.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2325)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2413)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2417)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

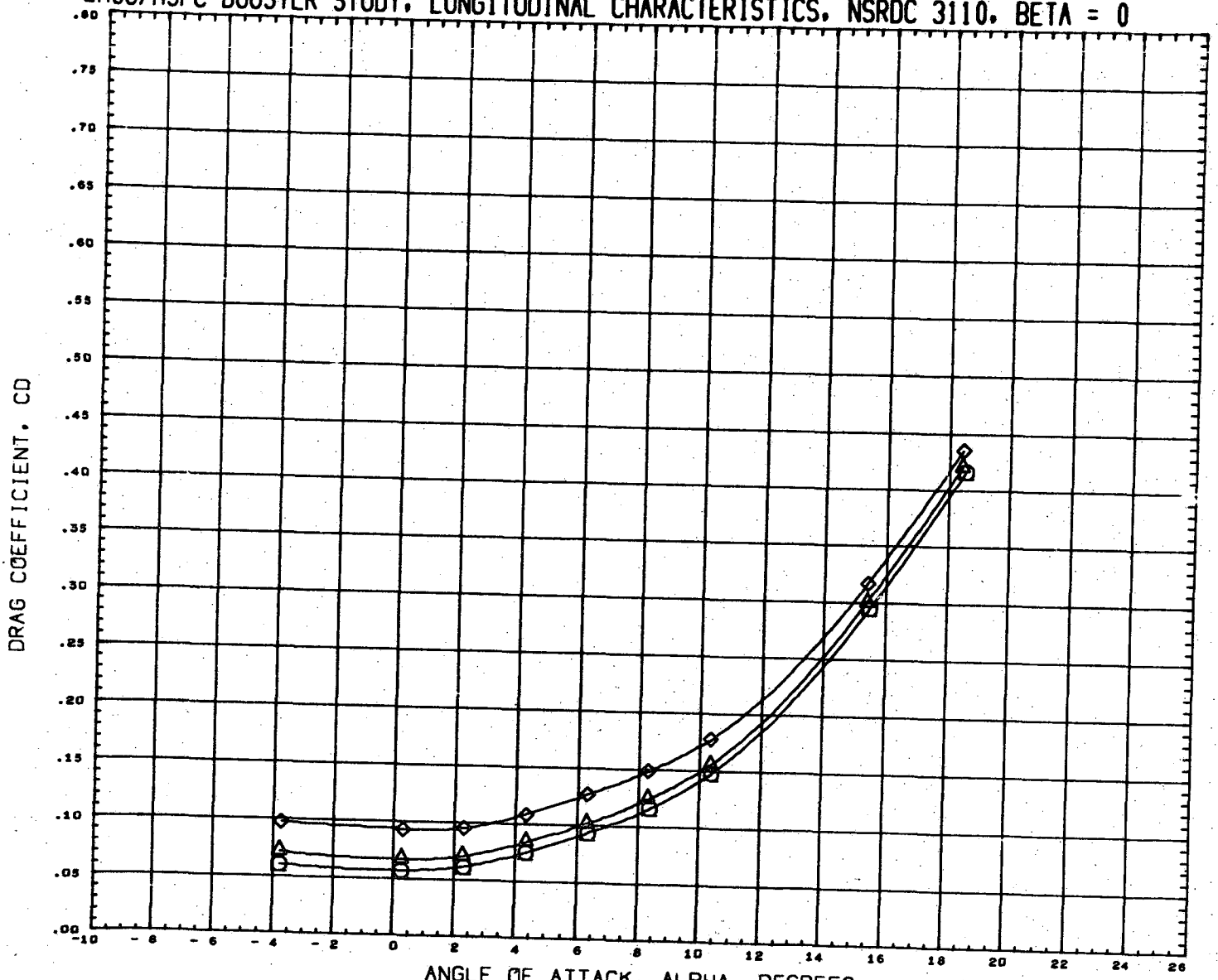
AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	0.000	1.000
10.000	20.000	0.000	1.000
20.000	20.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



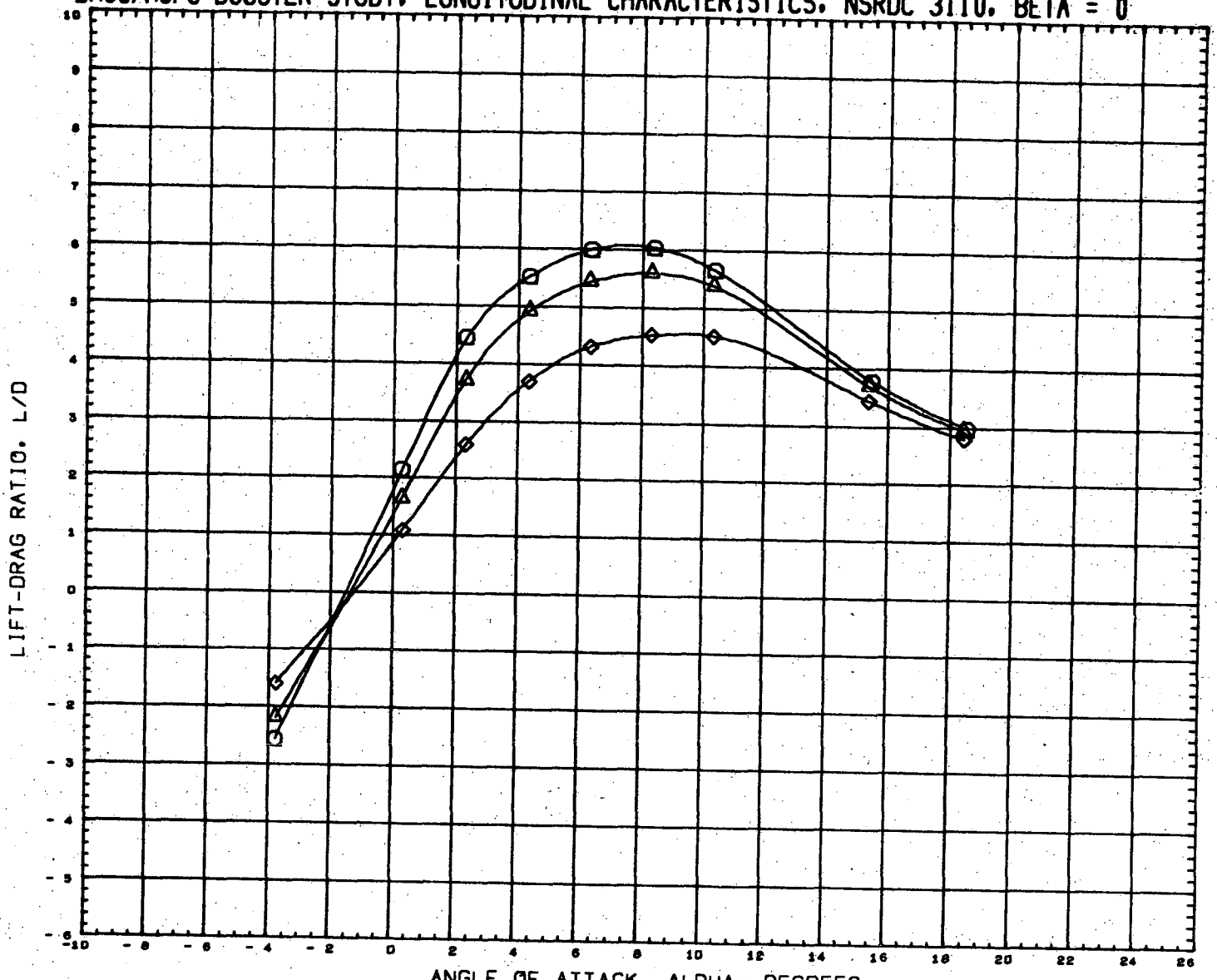
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2325) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2413) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2417) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	0.000	1.000
10.000	20.000	0.000	1.000
20.000	20.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2325)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2413)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2417)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

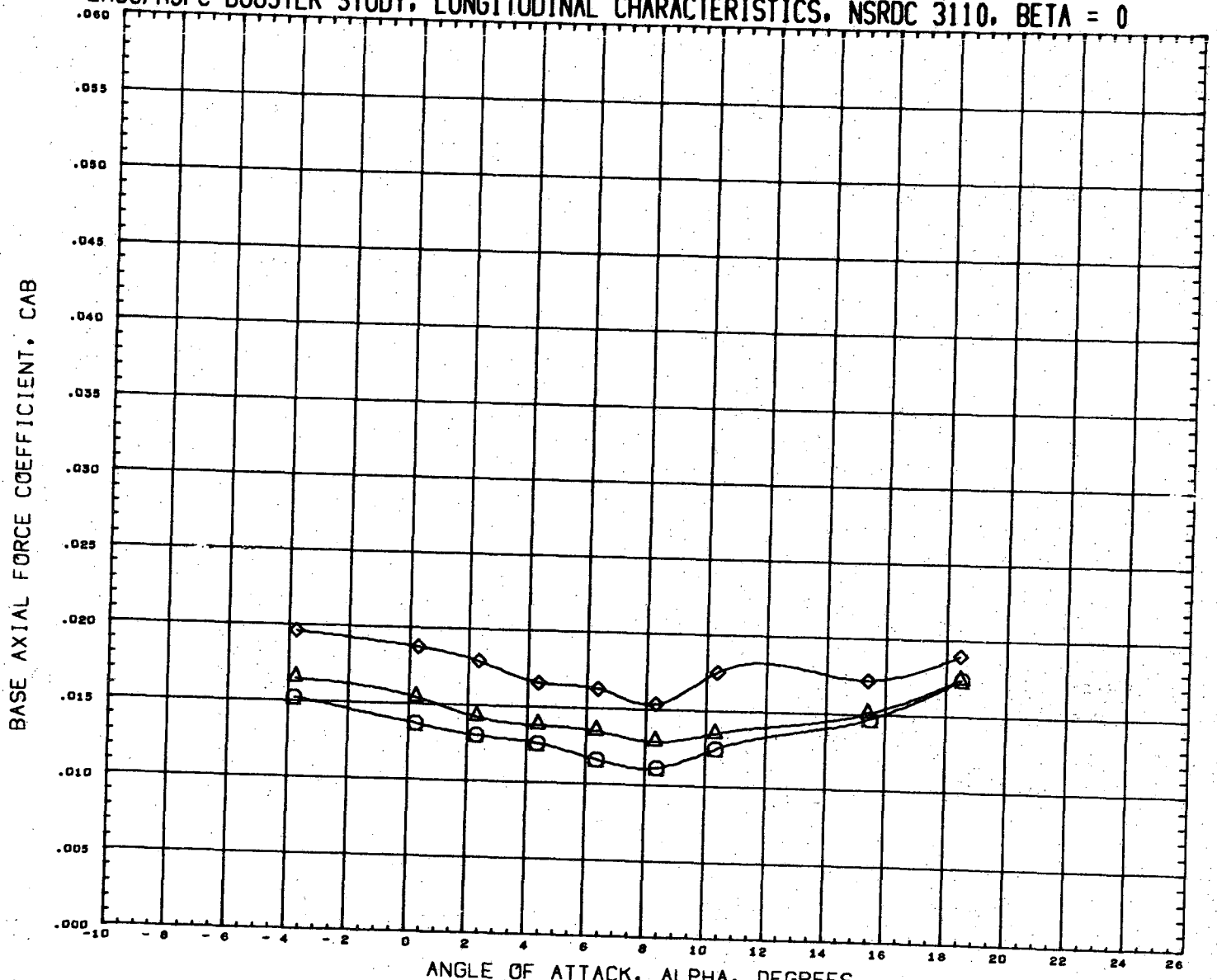
AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	0.000	1.000
10.000	20.000	0.000	1.000
20.000	20.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

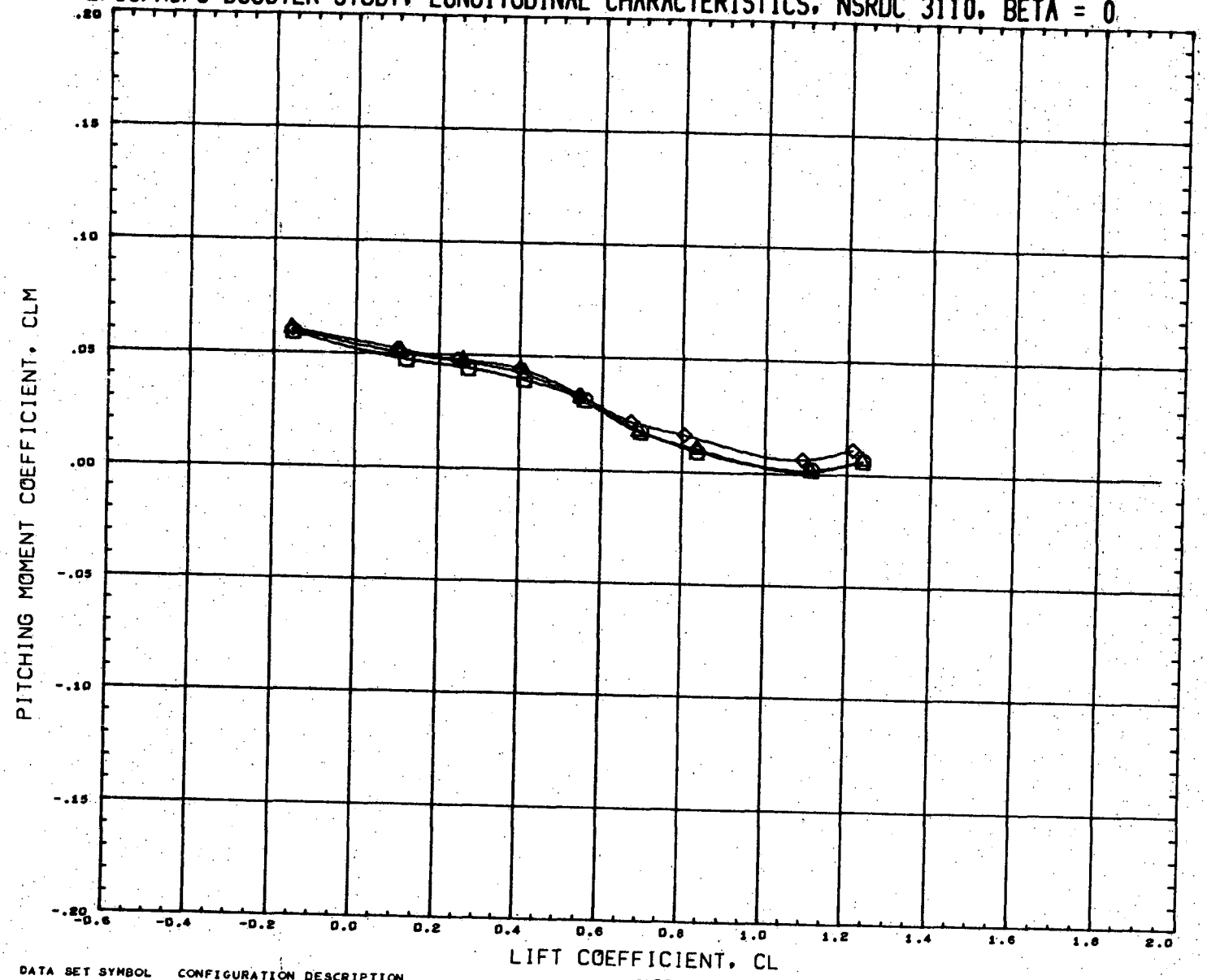


DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2325)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2413)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2417)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDFOS
0.000	20.000	0.000	1.000
10.000	20.000	0.000	1.000
20.000	20.000	0.000	1.000

MACH 0.361

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



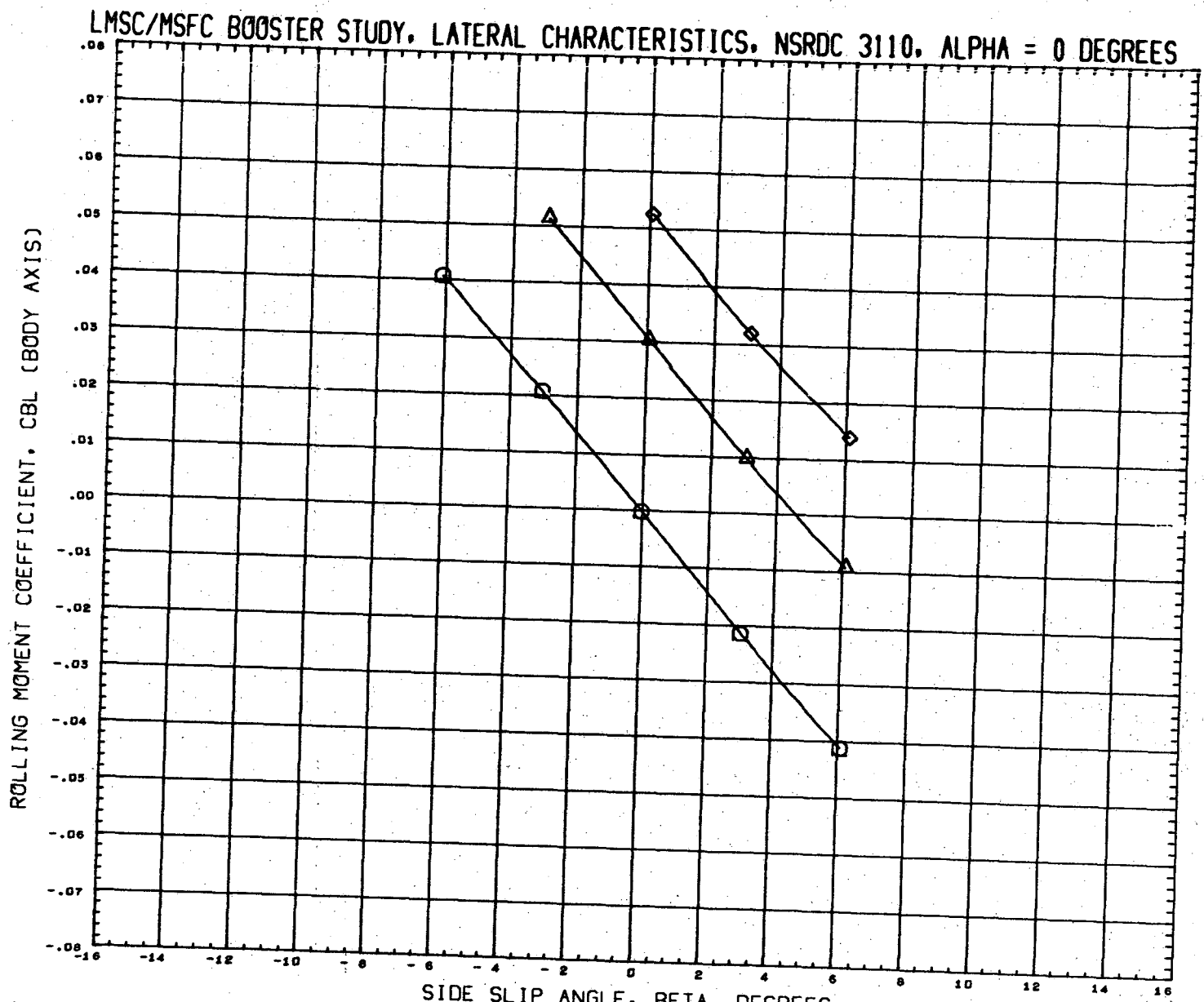
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2325) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2413) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2417) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	0.000	1.000
10.000	20.000	0.000	1.000
20.000	20.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2326)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2414)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2418)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

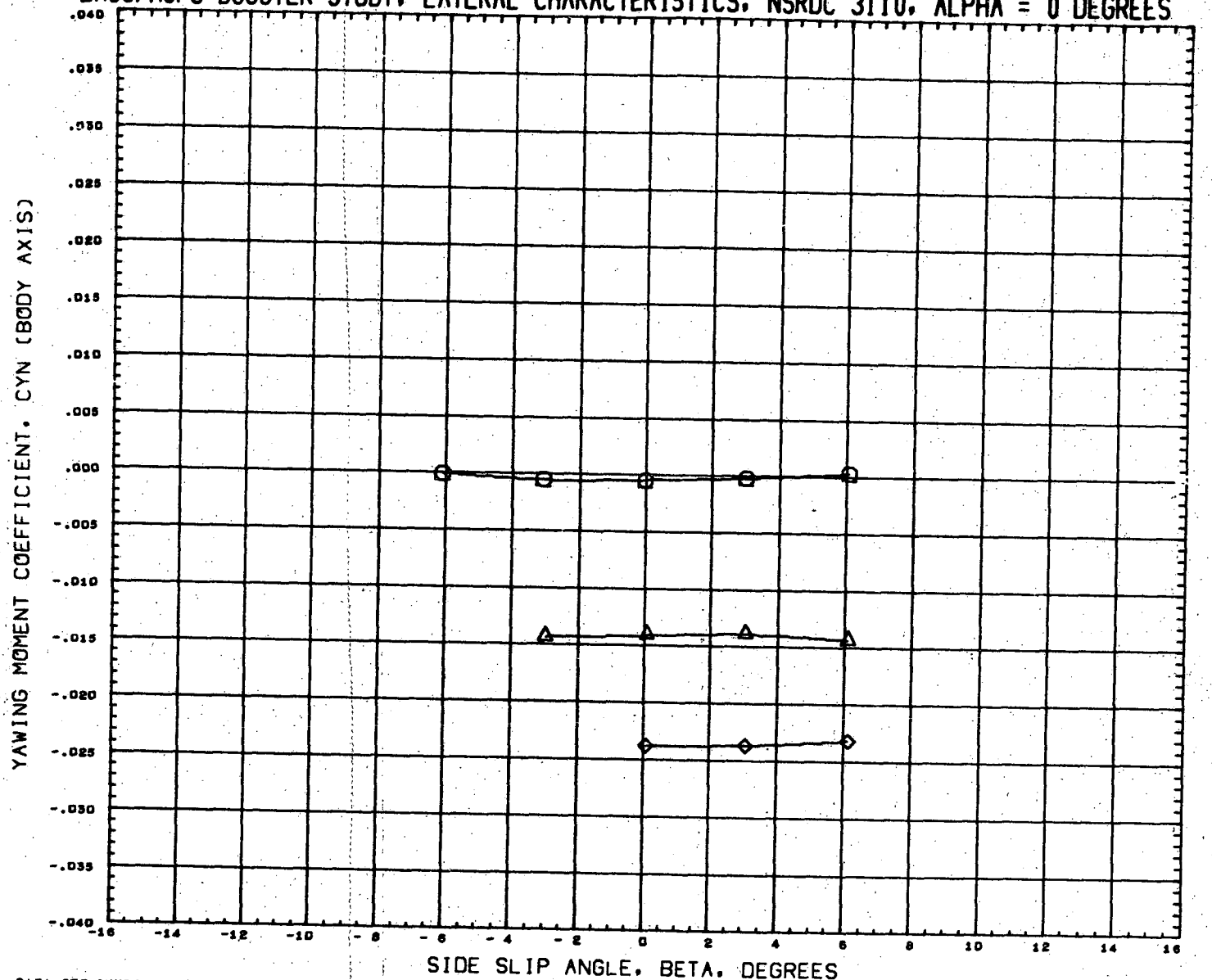
AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	0.000	1.000
10.000	20.000	0.000	1.000
20.000	20.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



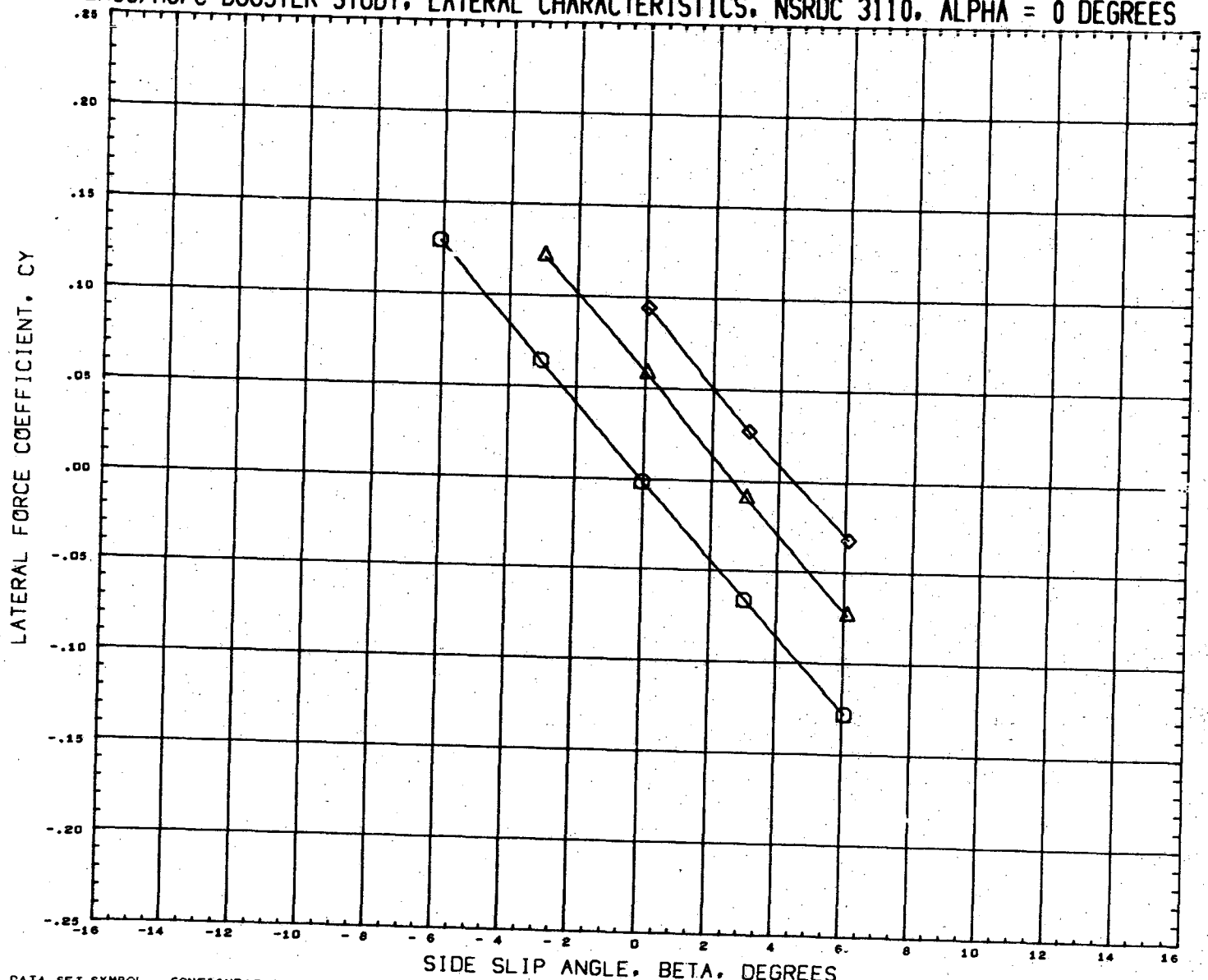
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2326)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2414)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2418)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	0.000	1.000
10.000	20.000	0.000	1.000
20.000	20.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2326)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2414)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2418)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

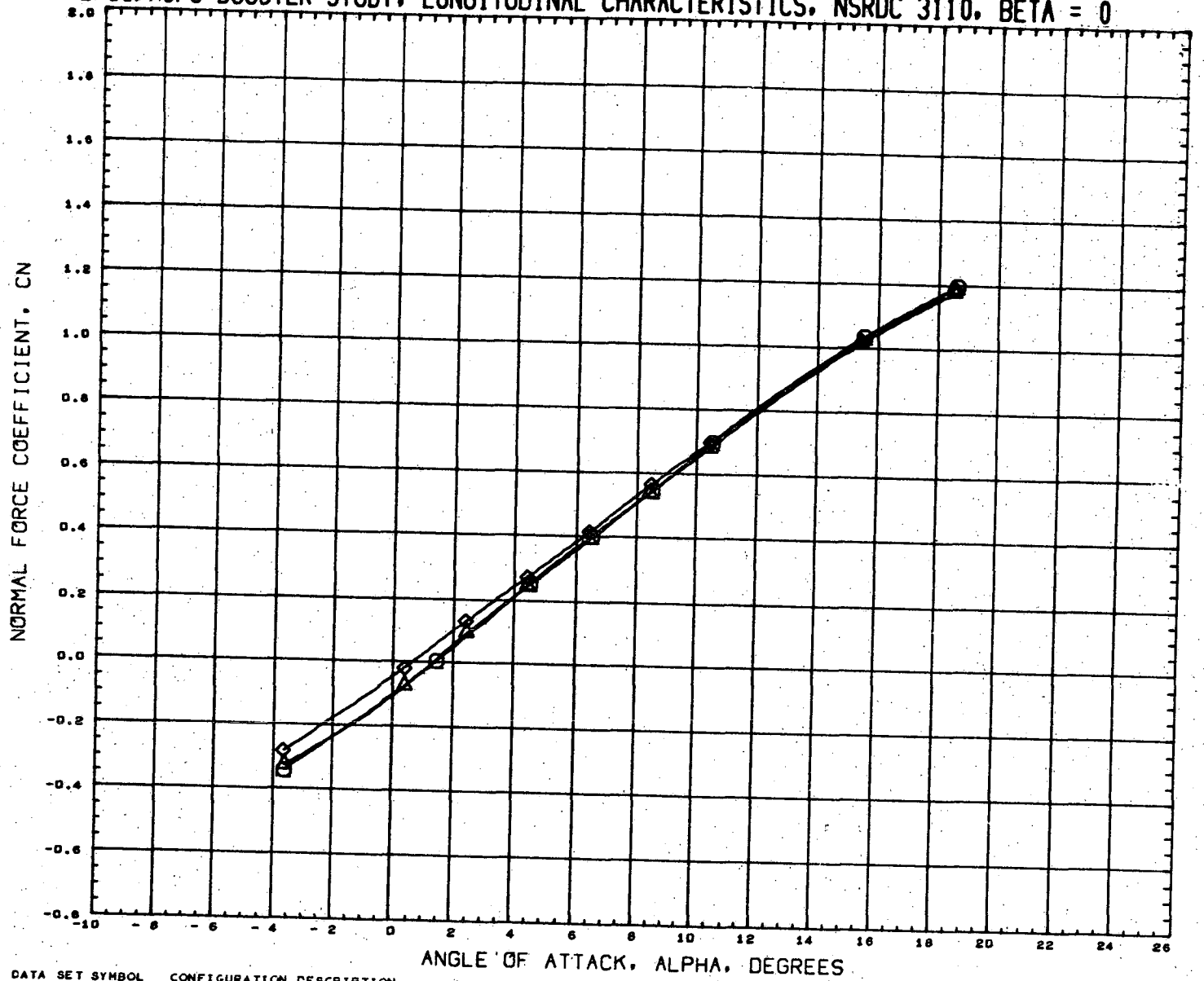
AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	0.000	1.000
10.000	20.000	0.000	1.000
20.000	20.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

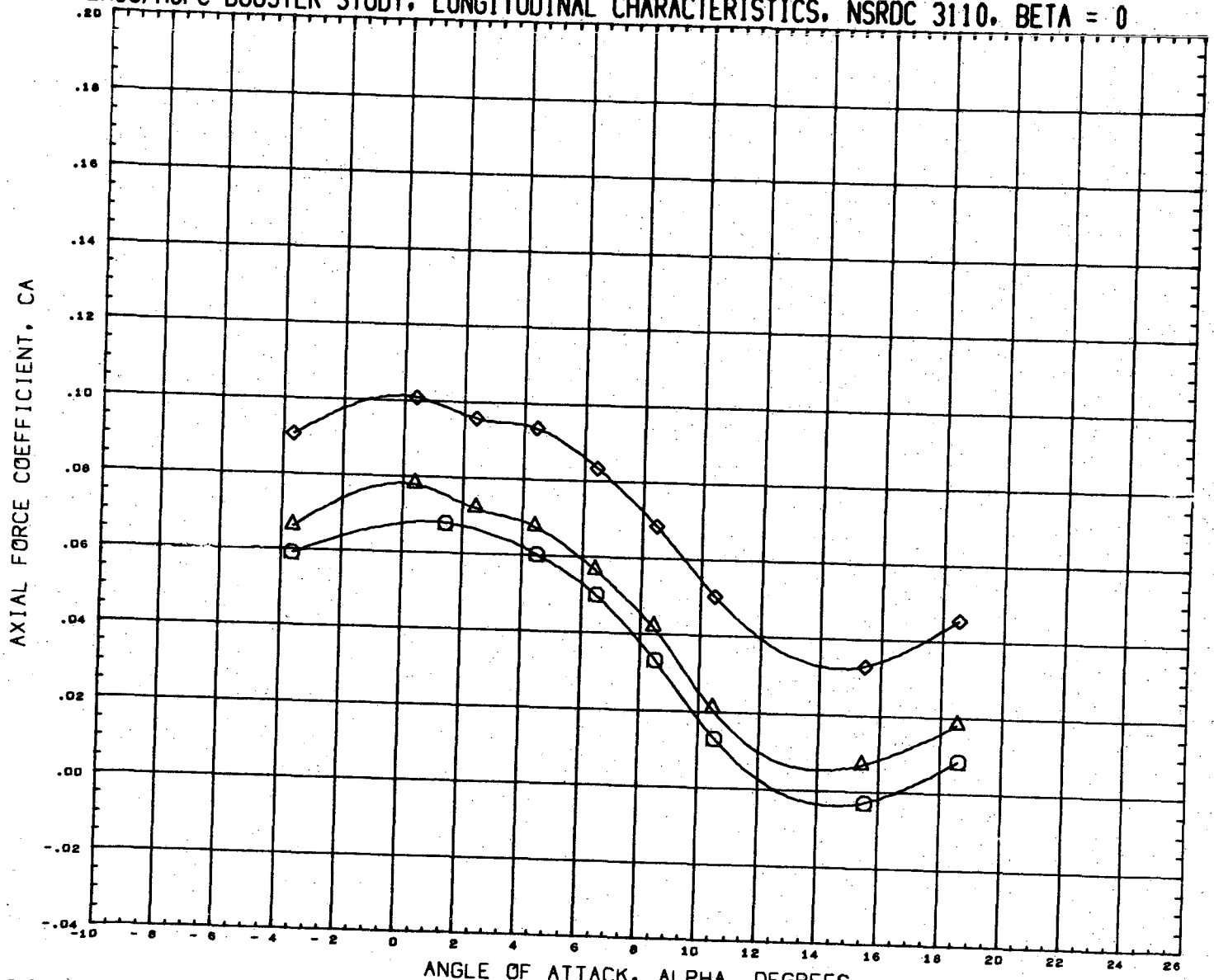


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AILRON	CANARD	ELEVTR	CNDPOS
(RN2349) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	0.000	20.000	-10.000	1.000
(RN2421) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	-10.000	20.000	-10.000	1.000
(RN2425) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	20.000	20.000	-10.000	1.000

MACH 0.382

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2349)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2421)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2425)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

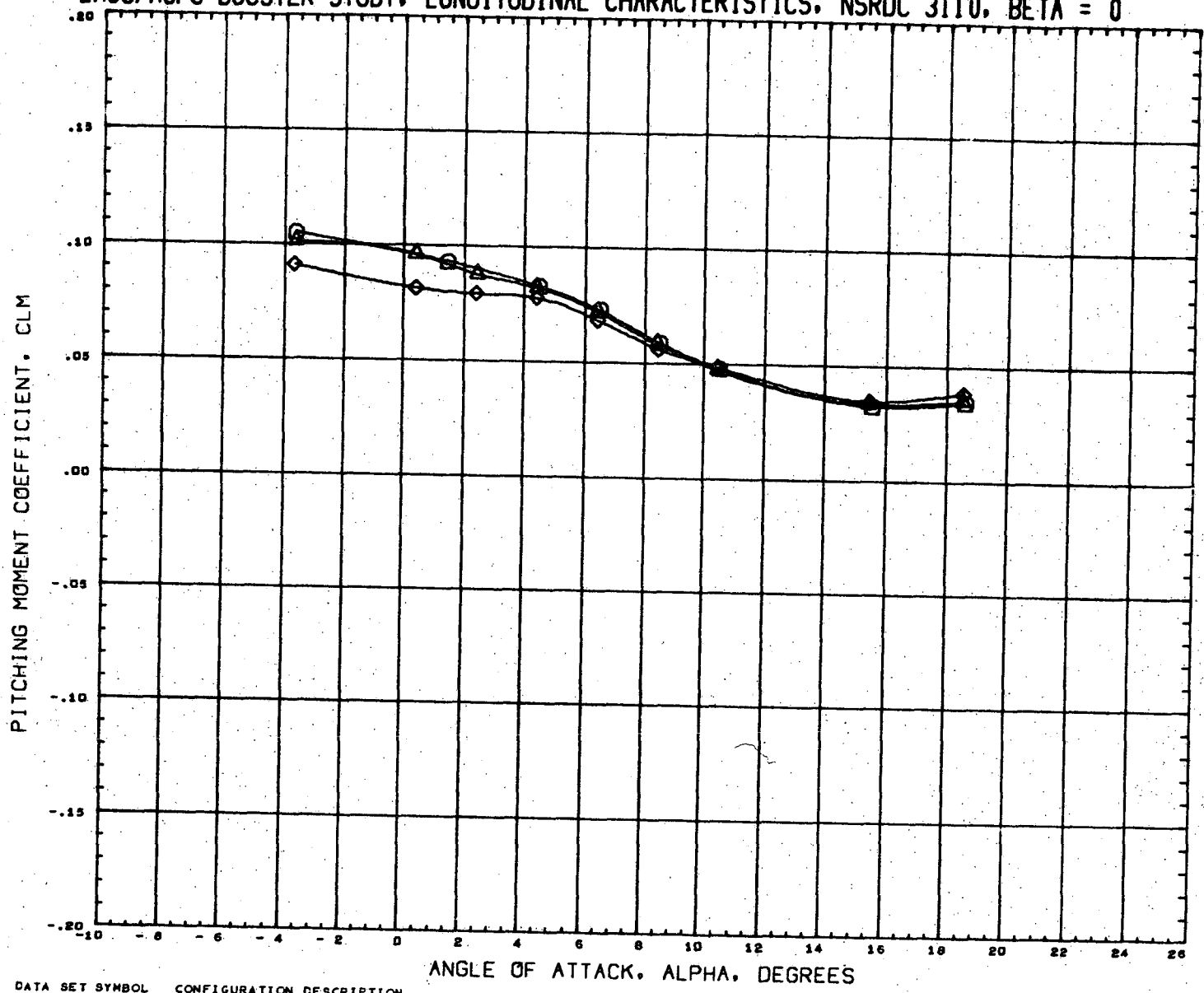
MACH 0.362

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	-10.000	1.000
-10.000	20.000	-10.000	1.000
20.000	20.000	-10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

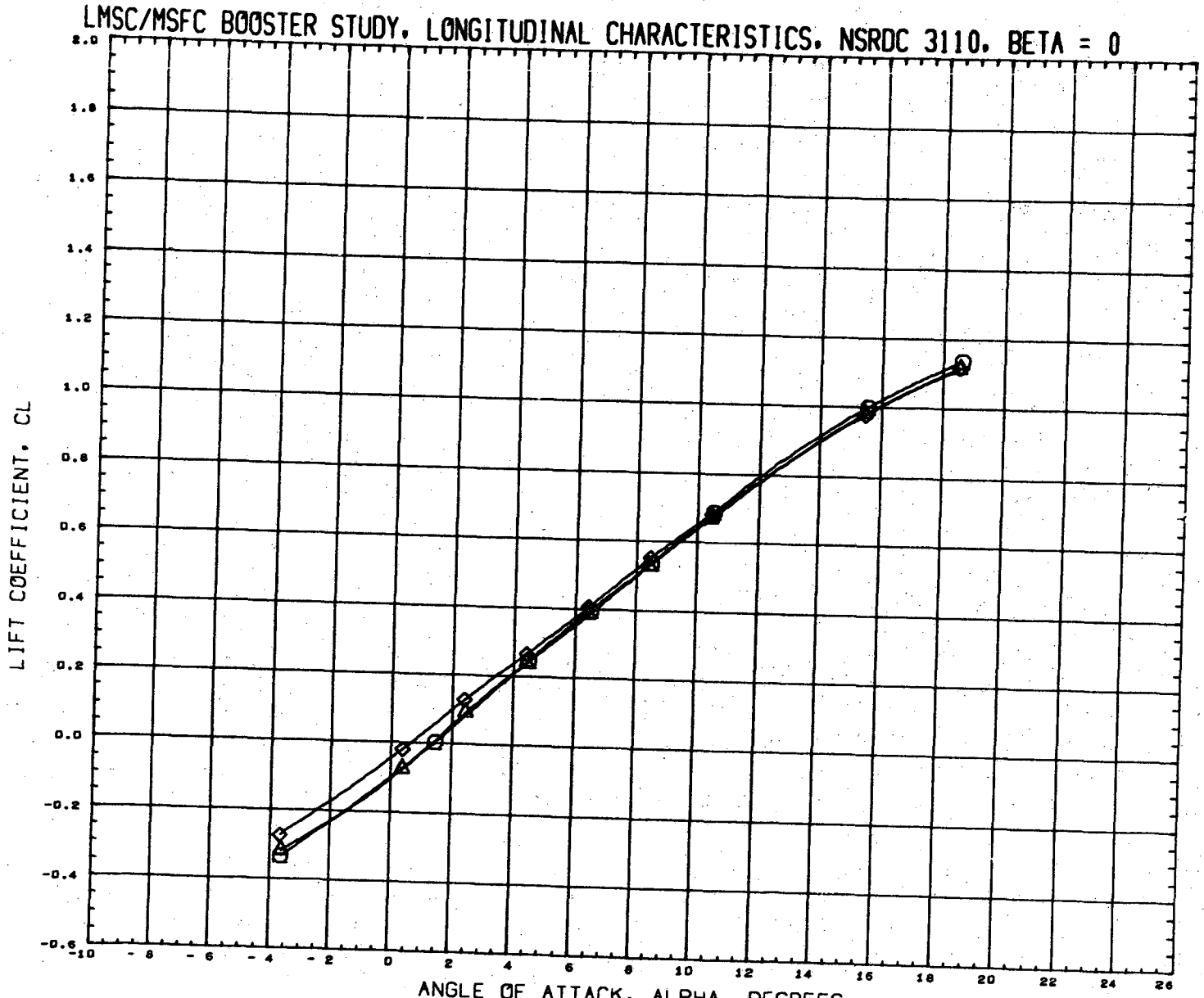
LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	AILRON	CANARD	ELEVTR	CNDPOS
(RN2349)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	0.000	20.000	-10.000	1.000
(RN2421)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	-10.000	20.000	-10.000	1.000
(RN2425)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	20.000	20.000	-10.000	1.000

MACH 0.362

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2349) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2421) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2425) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

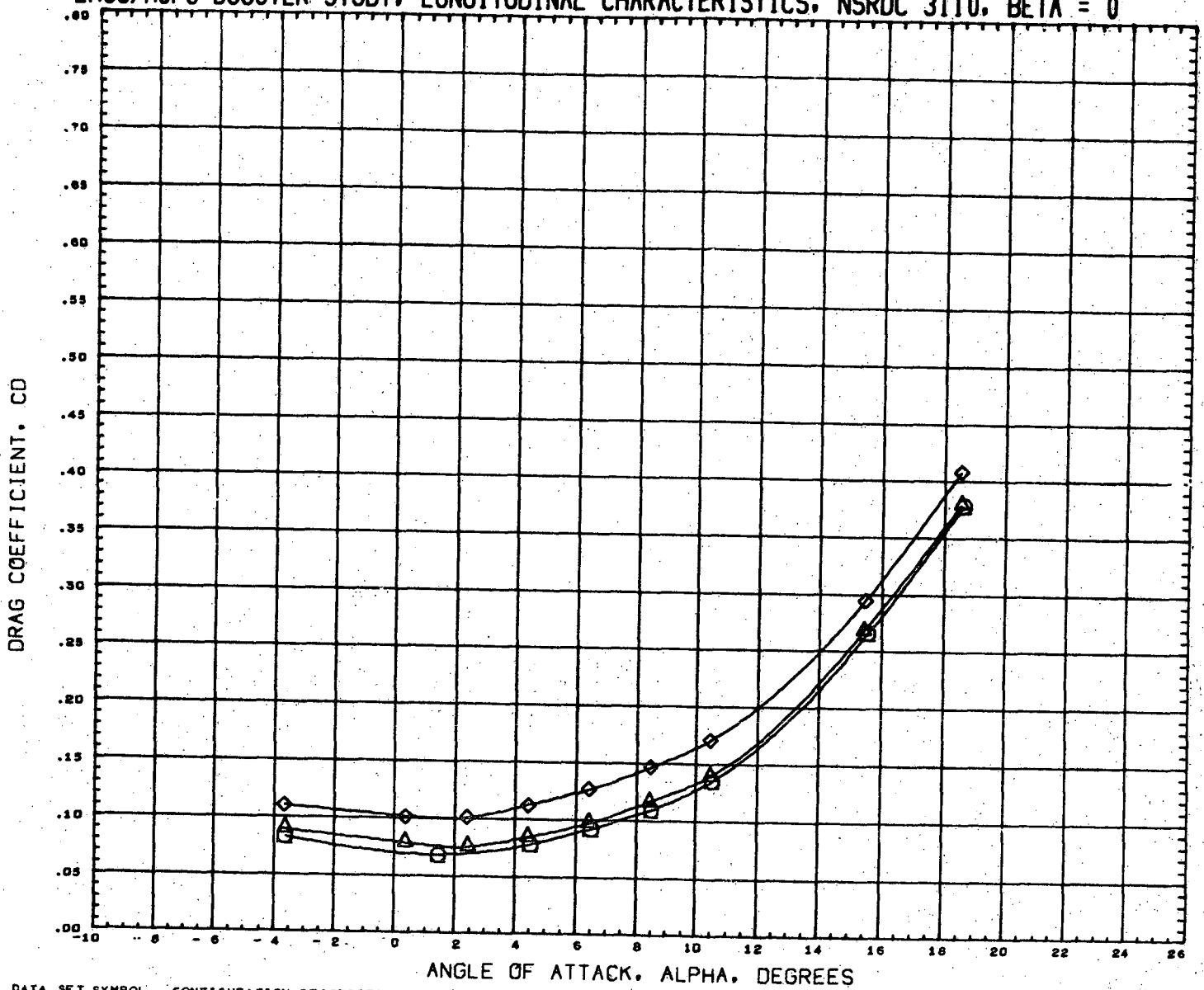
AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	-10.000	1.000
-10.000	20.000	-10.000	1.000
20.000	20.000	-10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRF	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



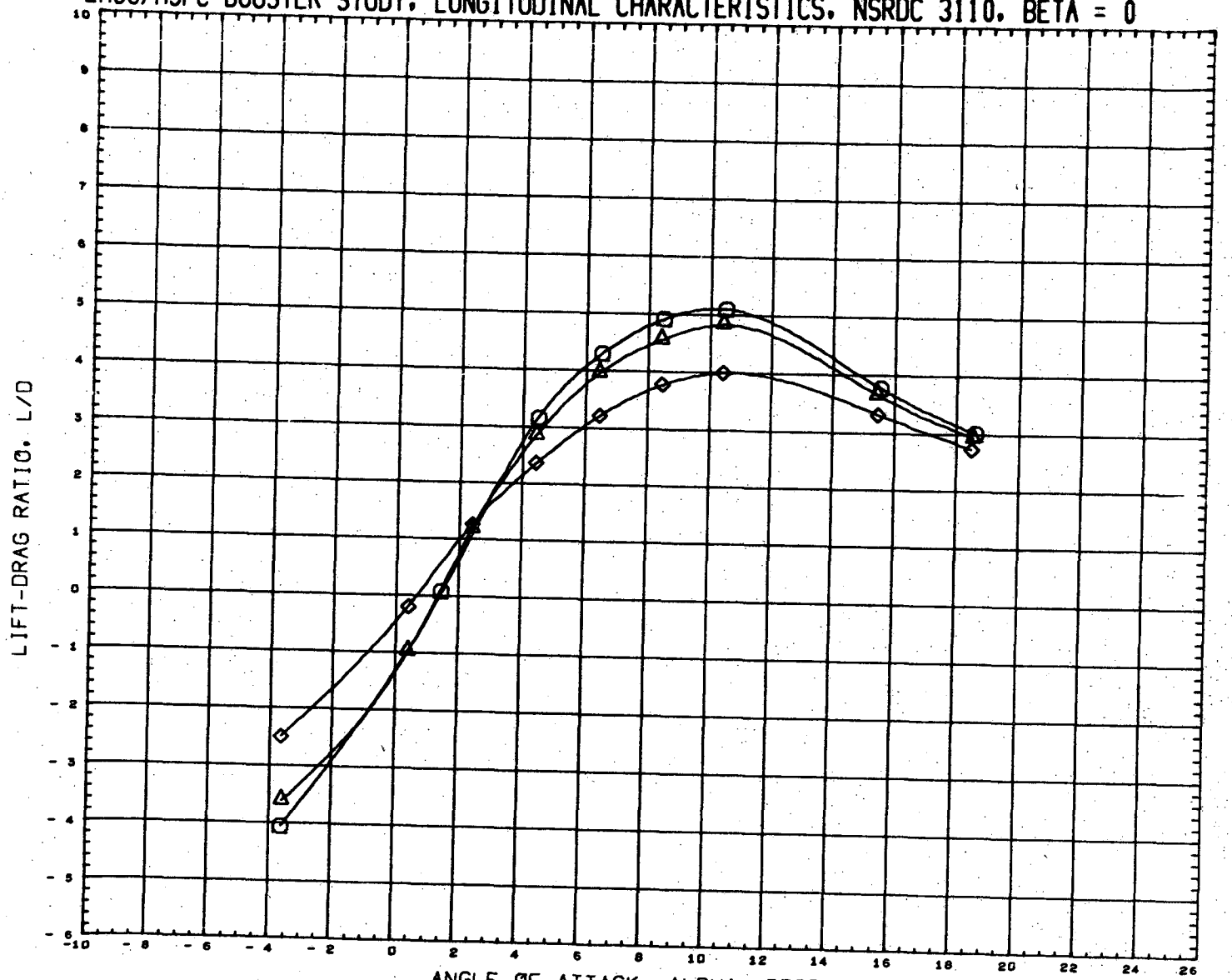
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2349)	□	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2421)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2425)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	-10.000	1.000
-10.000	20.000	-10.000	1.000
20.000	20.000	-10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

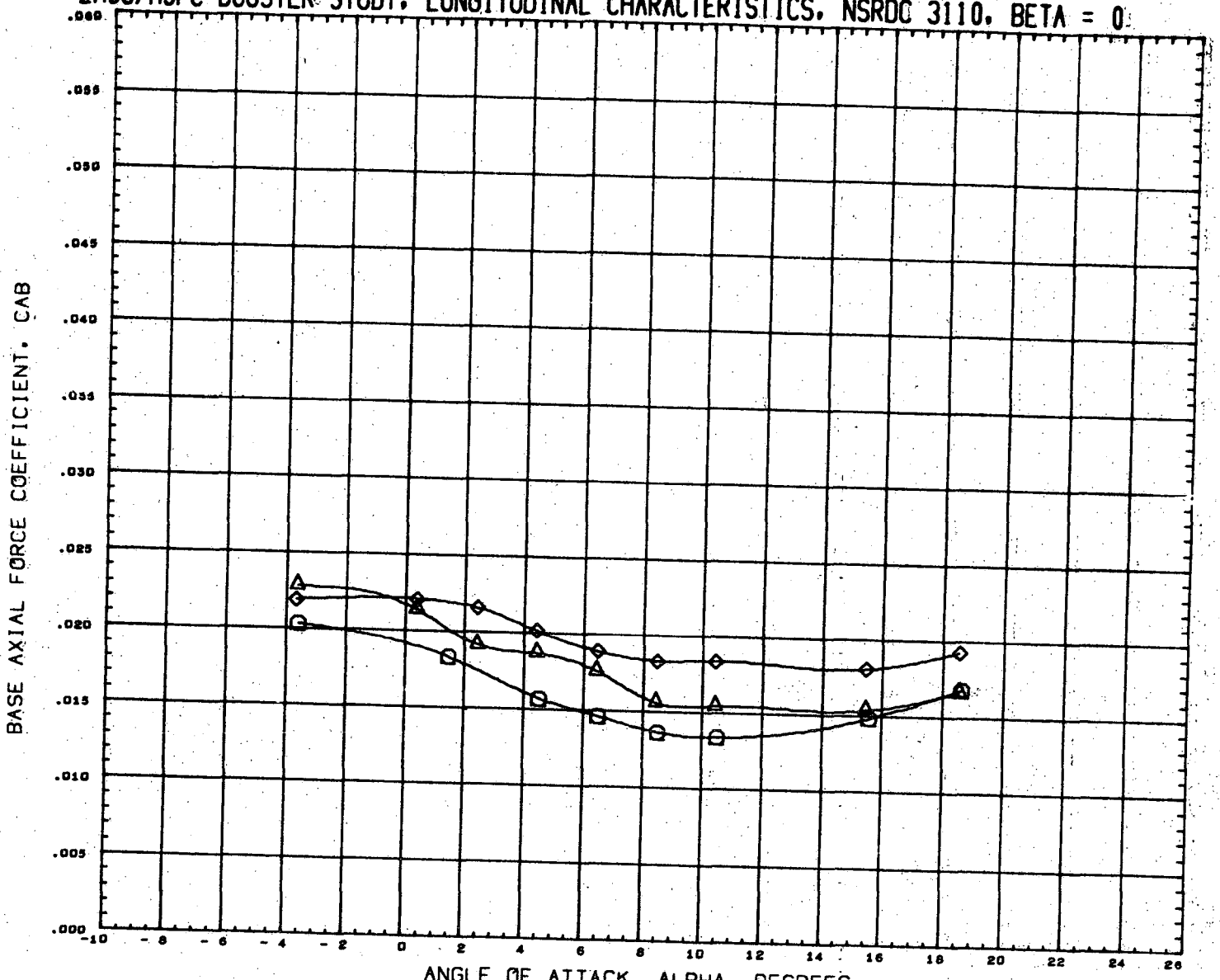


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AILRON	CANARD	ELEVTR	CNDPOS
(RN2349) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	0.000	20.000	-10.000	1.000
(RN2421) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	-10.000	20.000	-10.000	1.000
(RN2425) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	20.000	20.000	-10.000	1.000

MACH 0.382

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0.

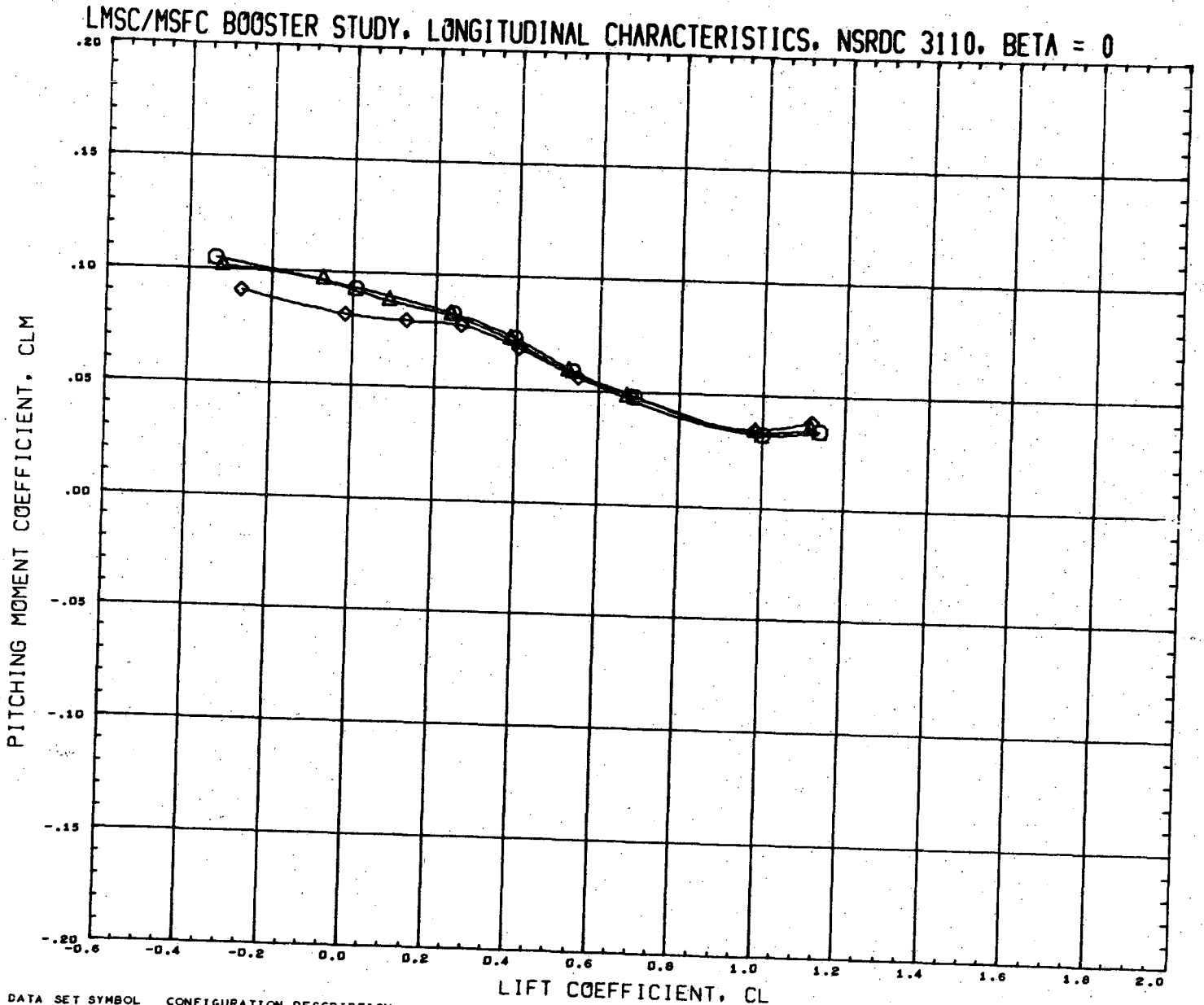


DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2349) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2421) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2425) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	-10.000	1.000
-10.000	20.000	-10.000	1.000
20.000	20.000	-10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2349)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2421)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2425)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

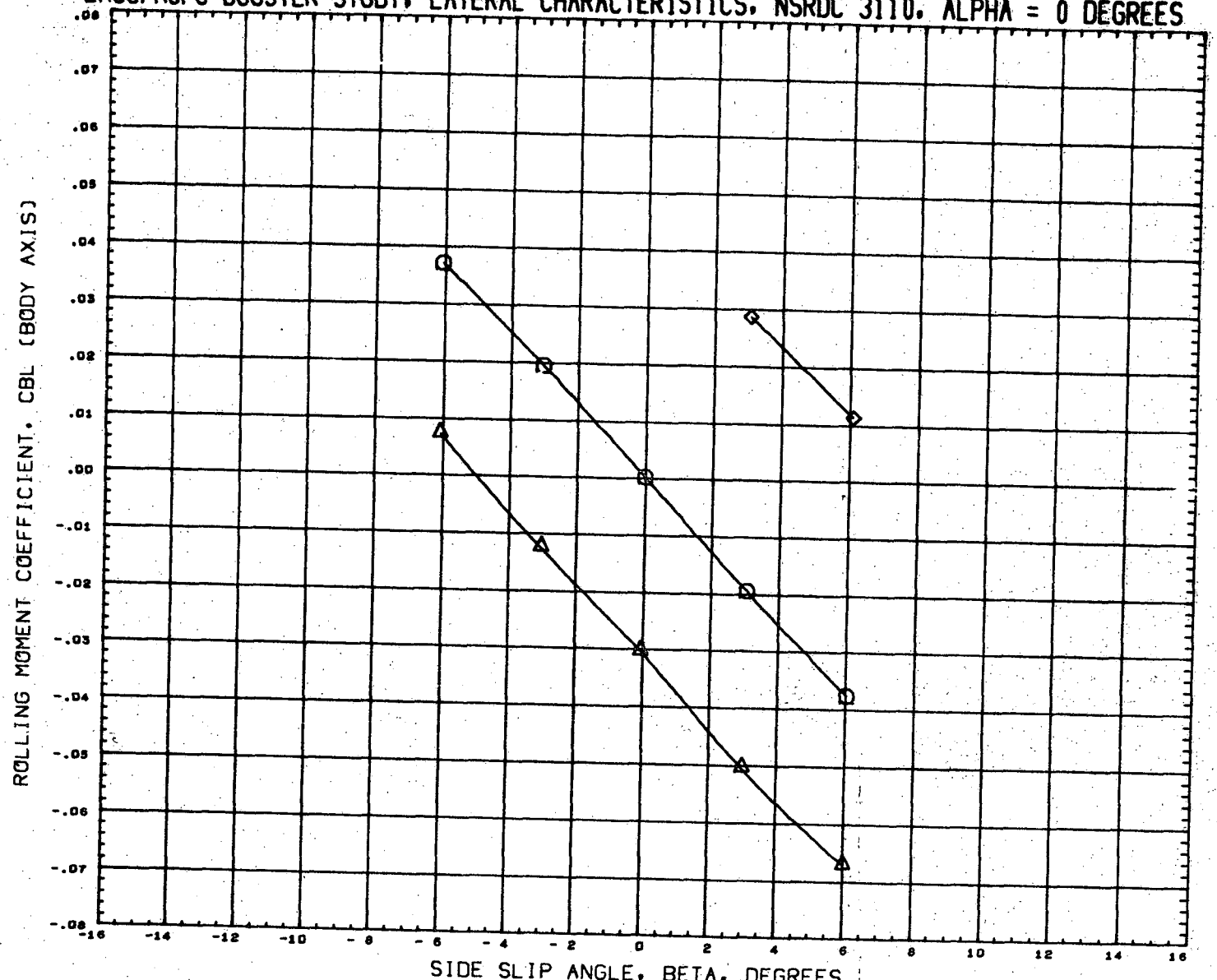
MACH 0.382

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	-10.000	1.000
-10.000	20.000	-10.000	1.000
20.000	20.000	-10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES

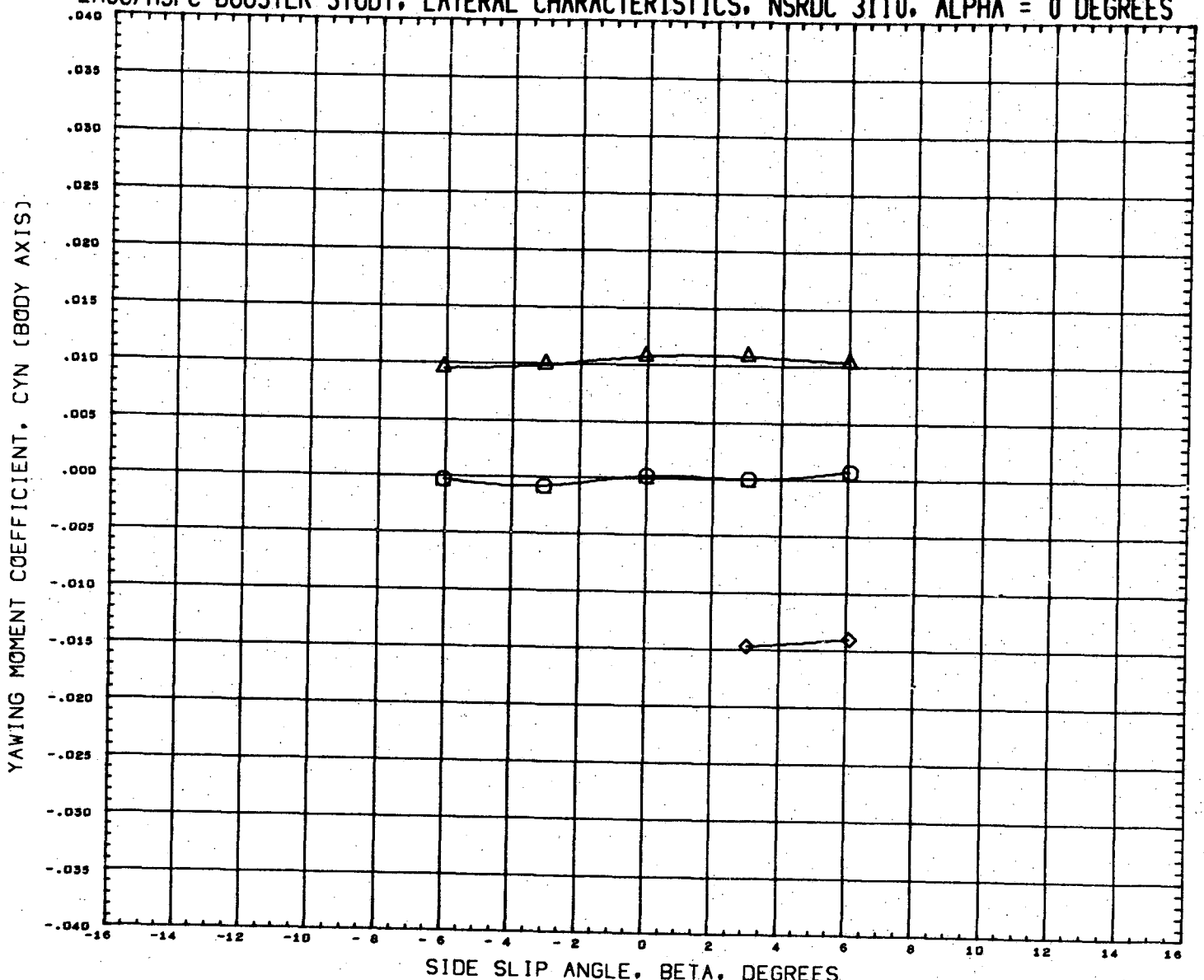


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AILRON	CANARD	ELEVTR	CNDPOS
(RN2350) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	0.000	20.000	-10.000	1.000
(RN2422) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	-10.000	20.000	-10.000	1.000
(RN2426) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1	20.000	20.000	-10.000	1.000

MACH 0.361

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BØØSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



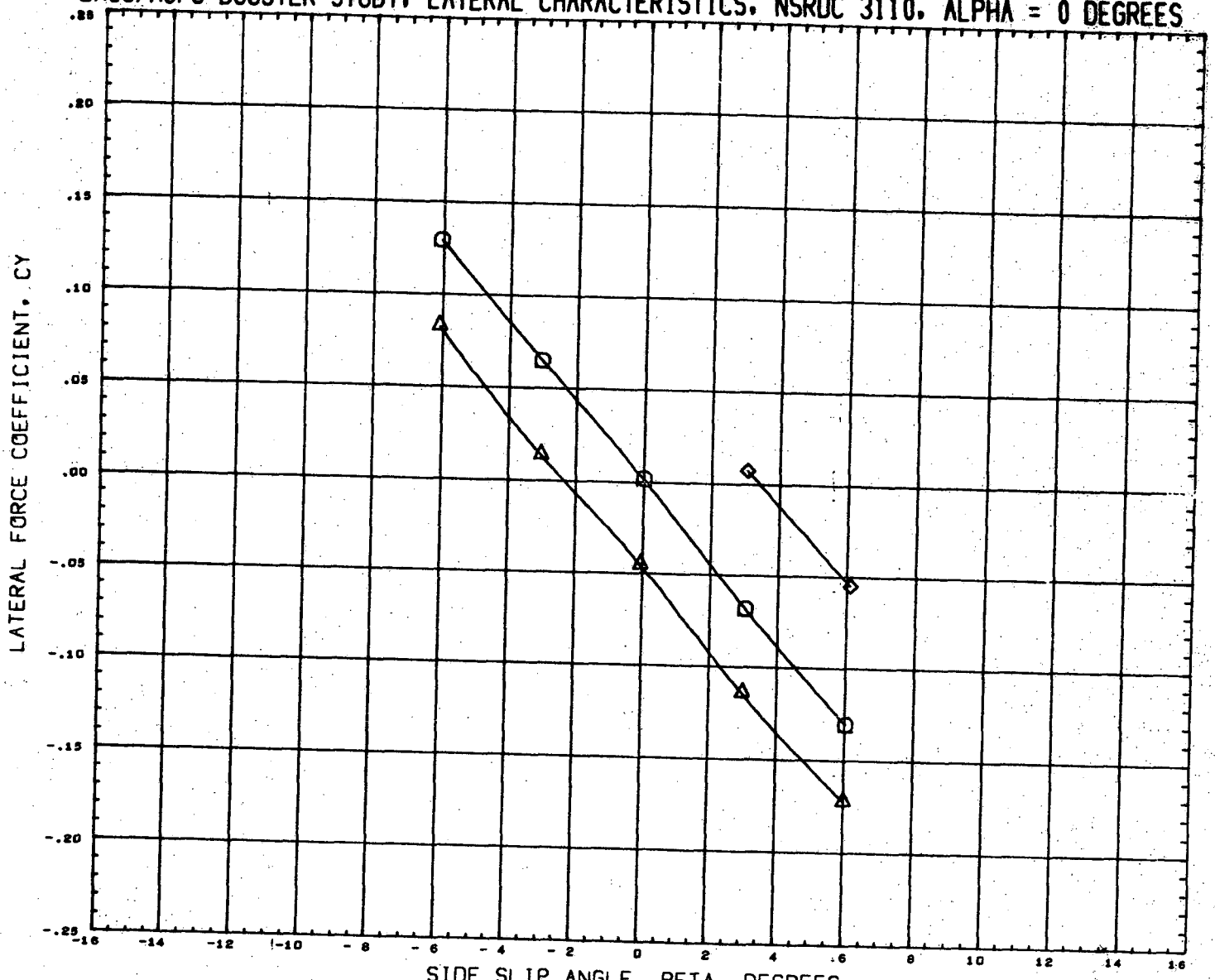
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2350)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2422)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2426)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNCPOS
0.000	20.000	-10.000	1.000
-10.000	20.000	-10.000	1.000
20.000	20.000	-10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES

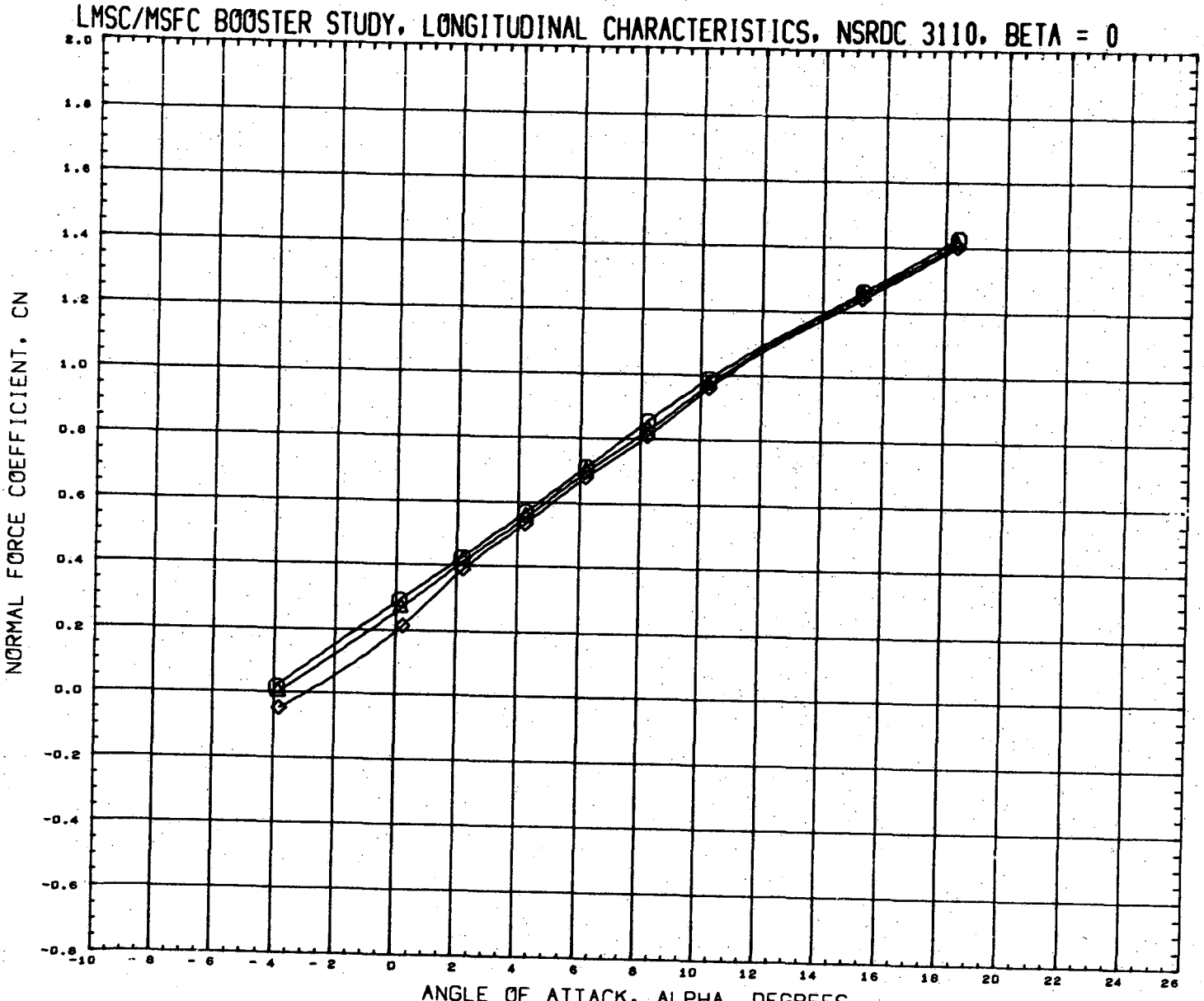


DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2350) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2422) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2426) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	-10.000	1.000
-10.000	20.000	-10.000	1.000
20.000	20.000	-10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

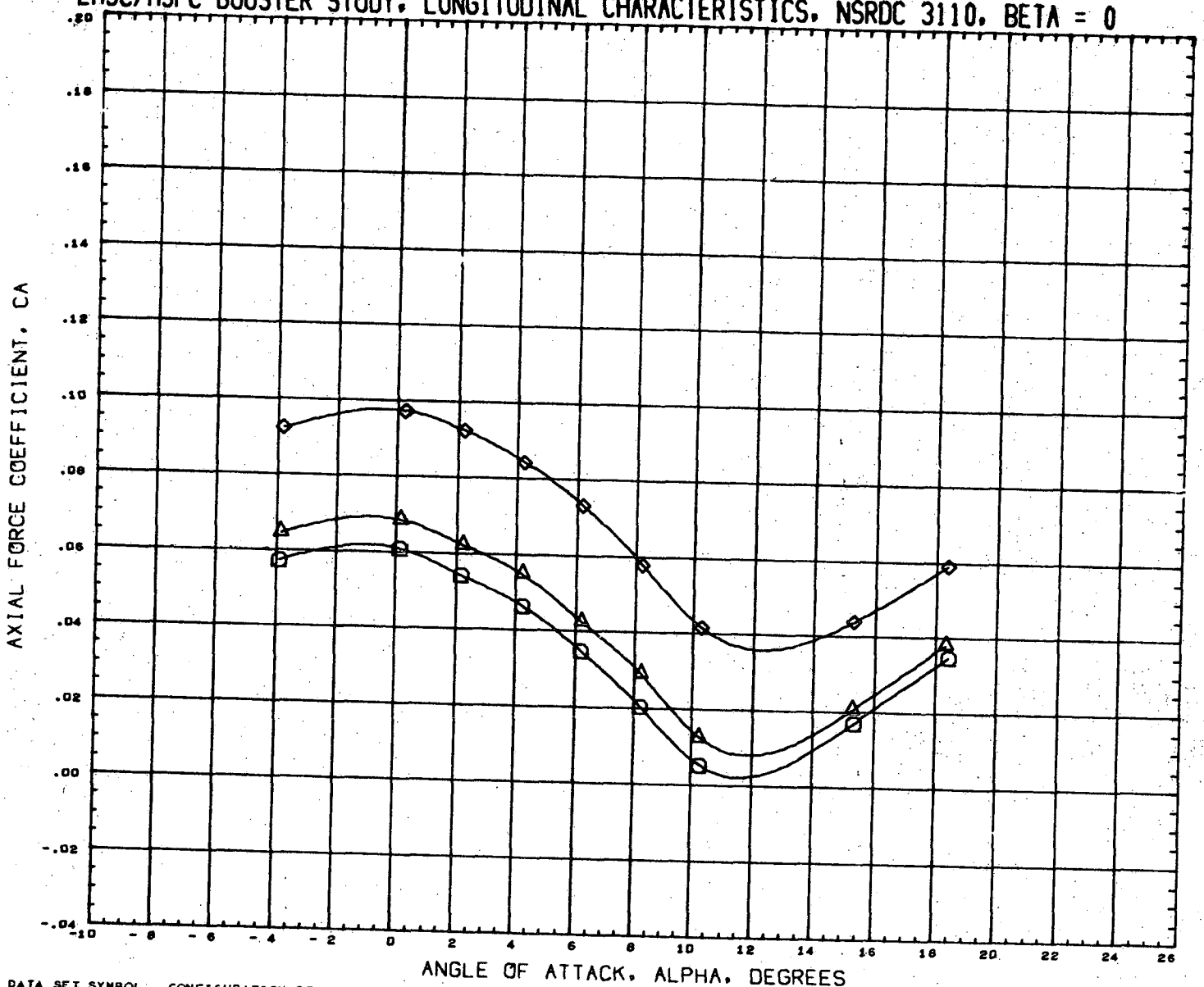


DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2361)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2429)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2433)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	10.000	1.000
10.000	20.000	10.000	1.000
20.000	20.000	10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382



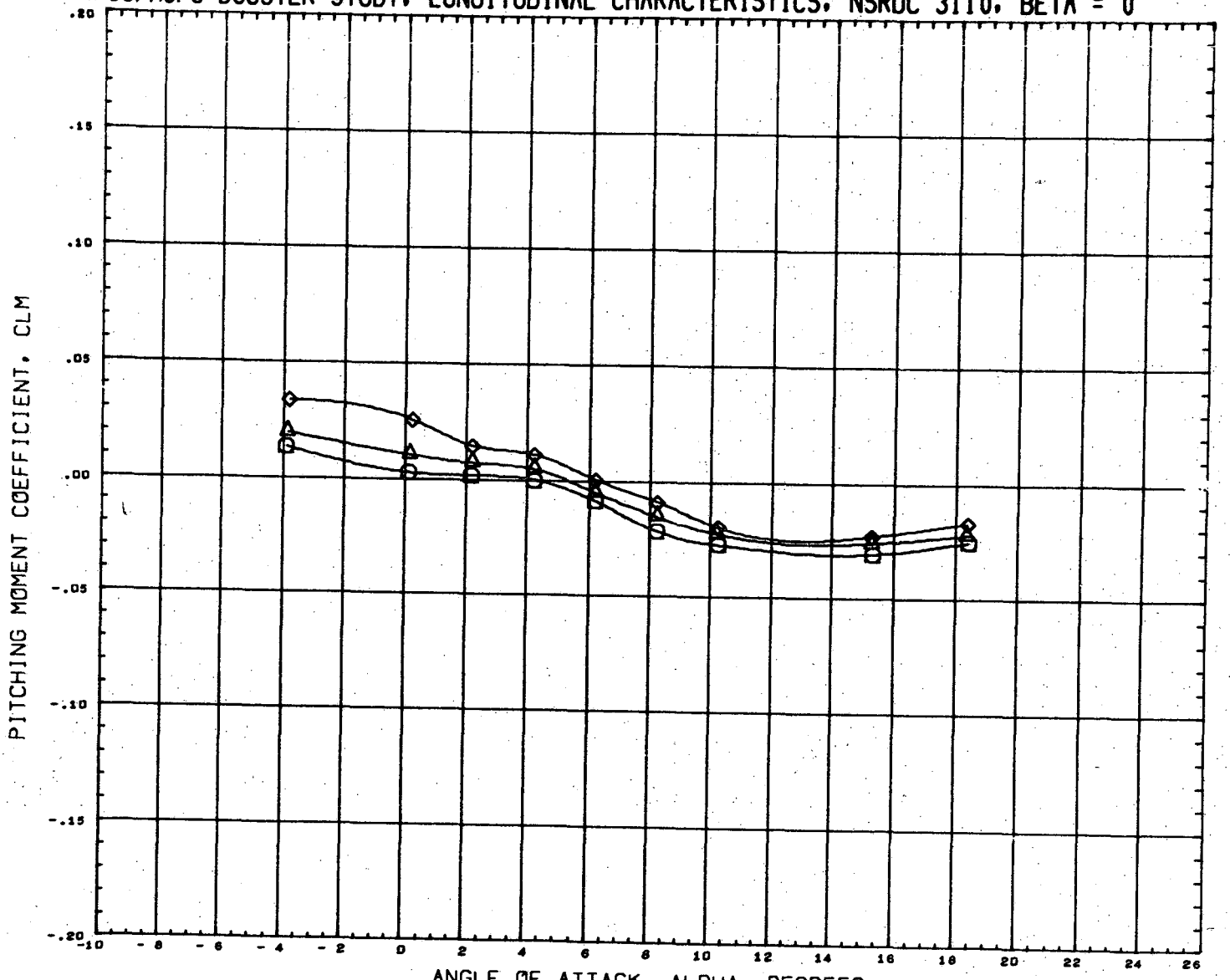
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2361) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2429) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2433) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	10.000	1.000
10.000	20.000	10.000	1.000
20.000	20.000	10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2361)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2429)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2433)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

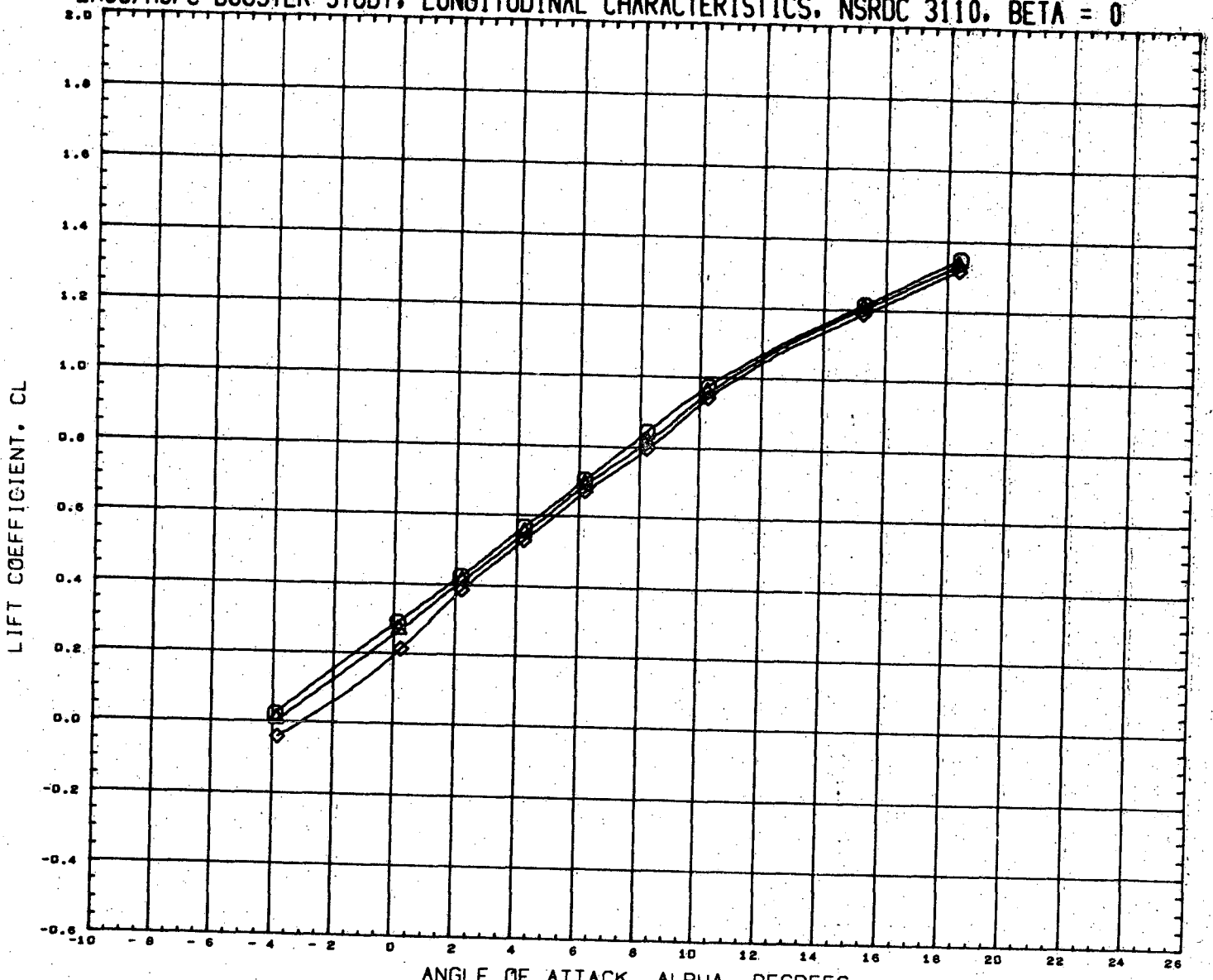
MACH 0.382

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	10.000	1.000
10.000	20.000	10.000	1.000
20.000	20.000	10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



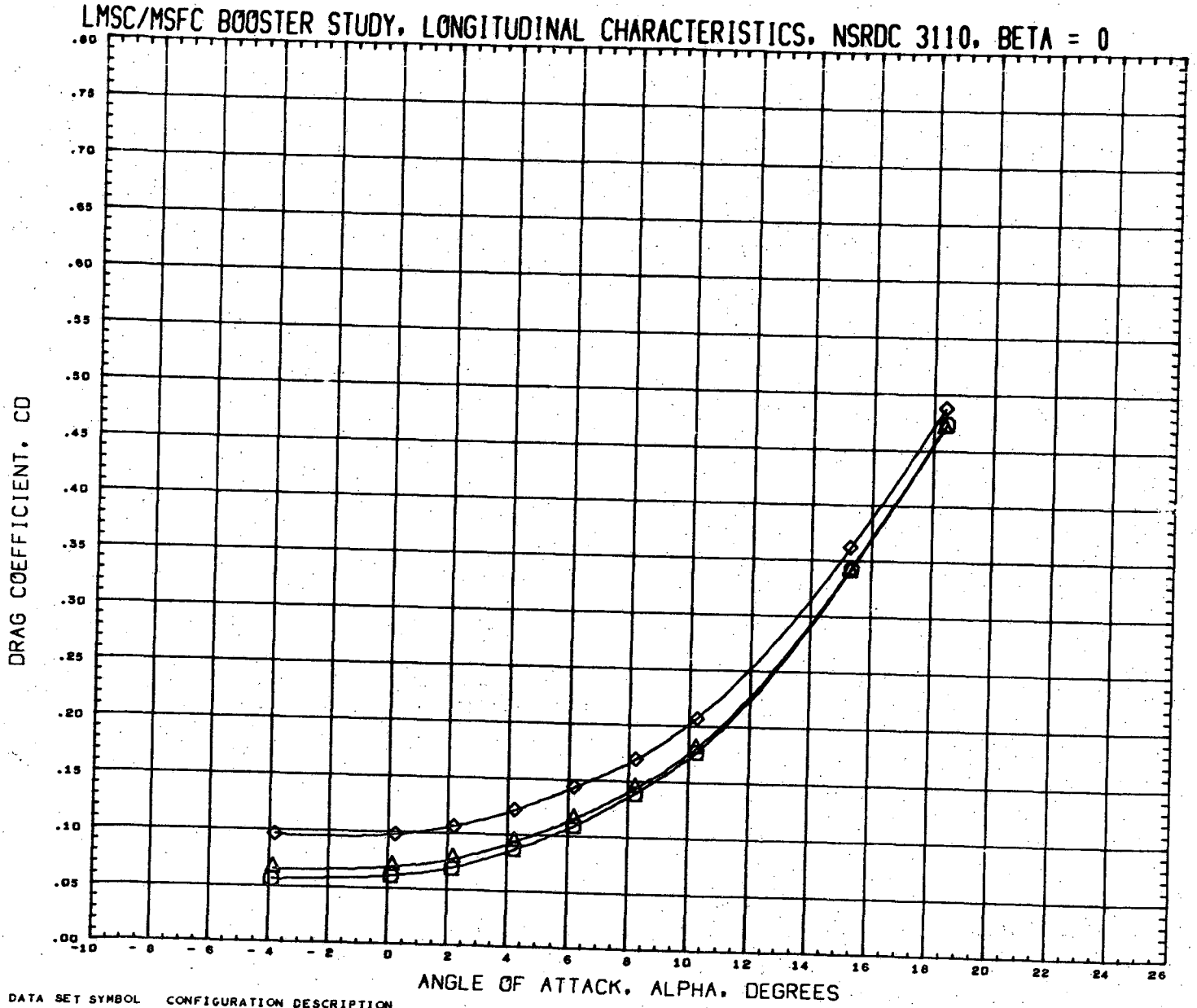
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2361)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2429)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2433)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

MACH 0.382

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	10.000	1.000
10.000	20.000	10.000	1.000
20.000	20.000	10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2361)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2429)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2433)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	10.000	1.000
10.000	20.000	10.000	1.000
20.000	20.000	10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2361)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2429)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2433)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

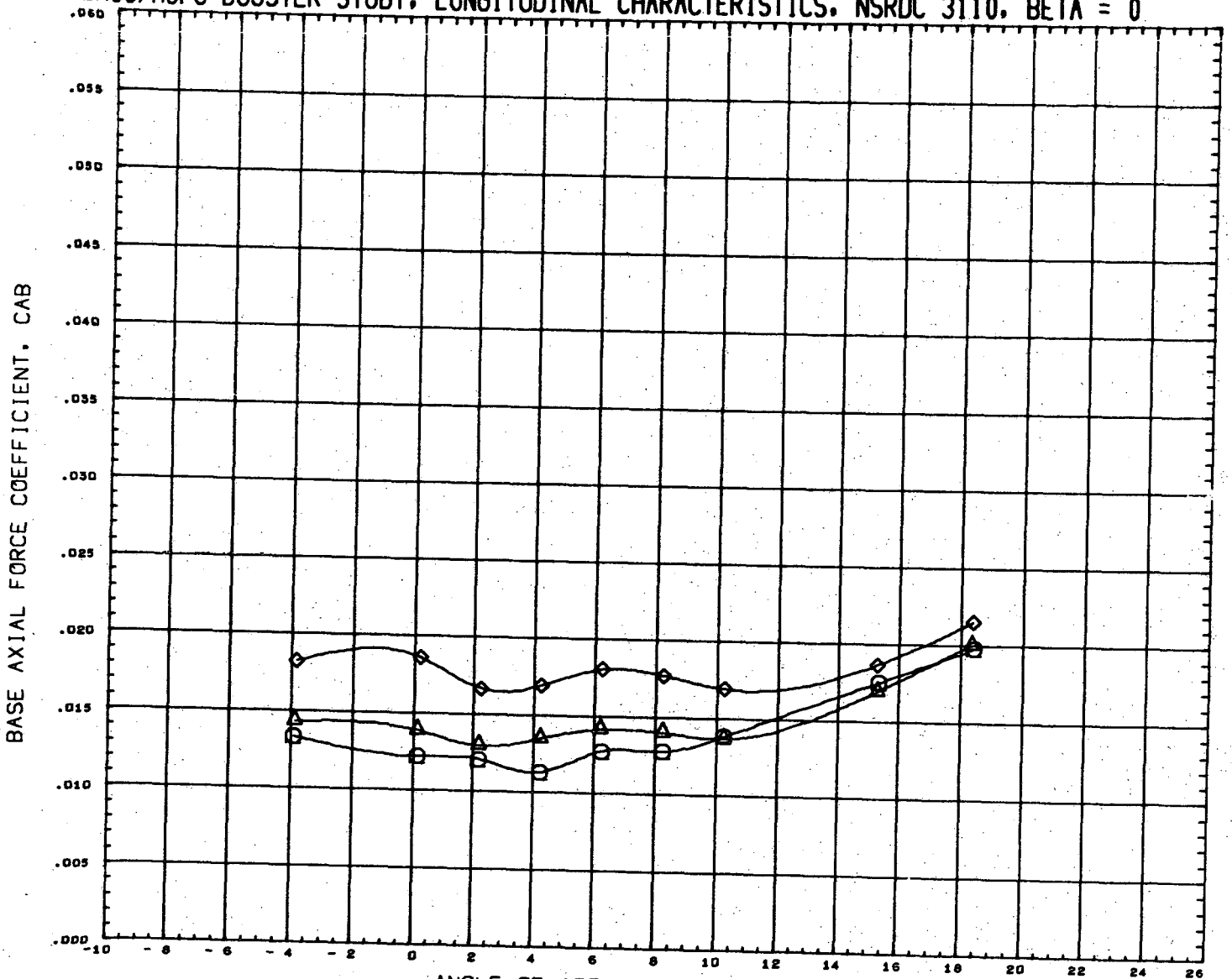
AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	10.000	1.000
10.000	20.000	10.000	1.000
20.000	20.000	10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2361) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2429) △	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2433) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

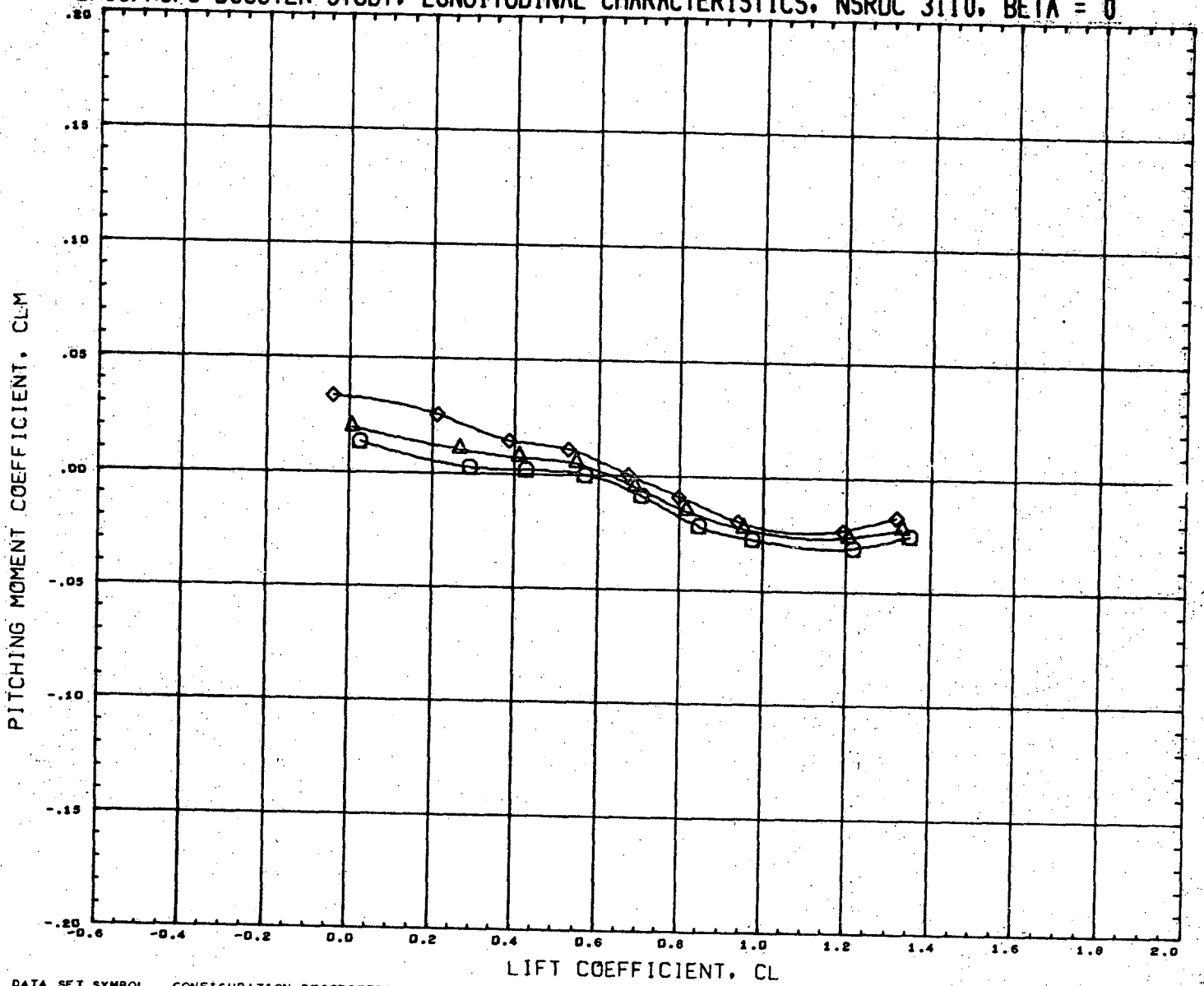
AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	10.000	1.000
10.000	20.000	10.000	1.000
20.000	20.000	10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2361)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2429)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2433)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

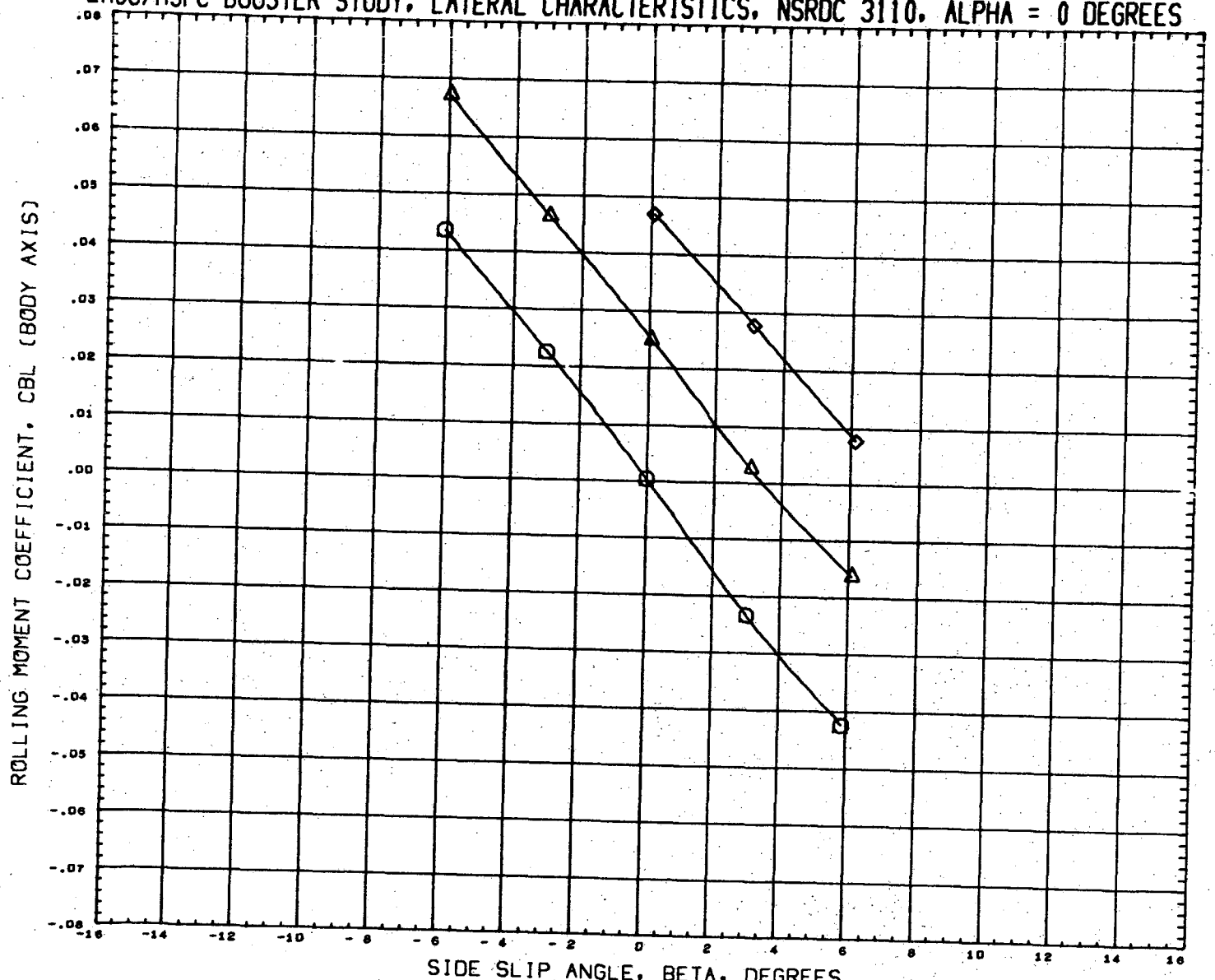
AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	10.000	1.000
10.000	20.000	10.000	1.000
20.000	20.000	10.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



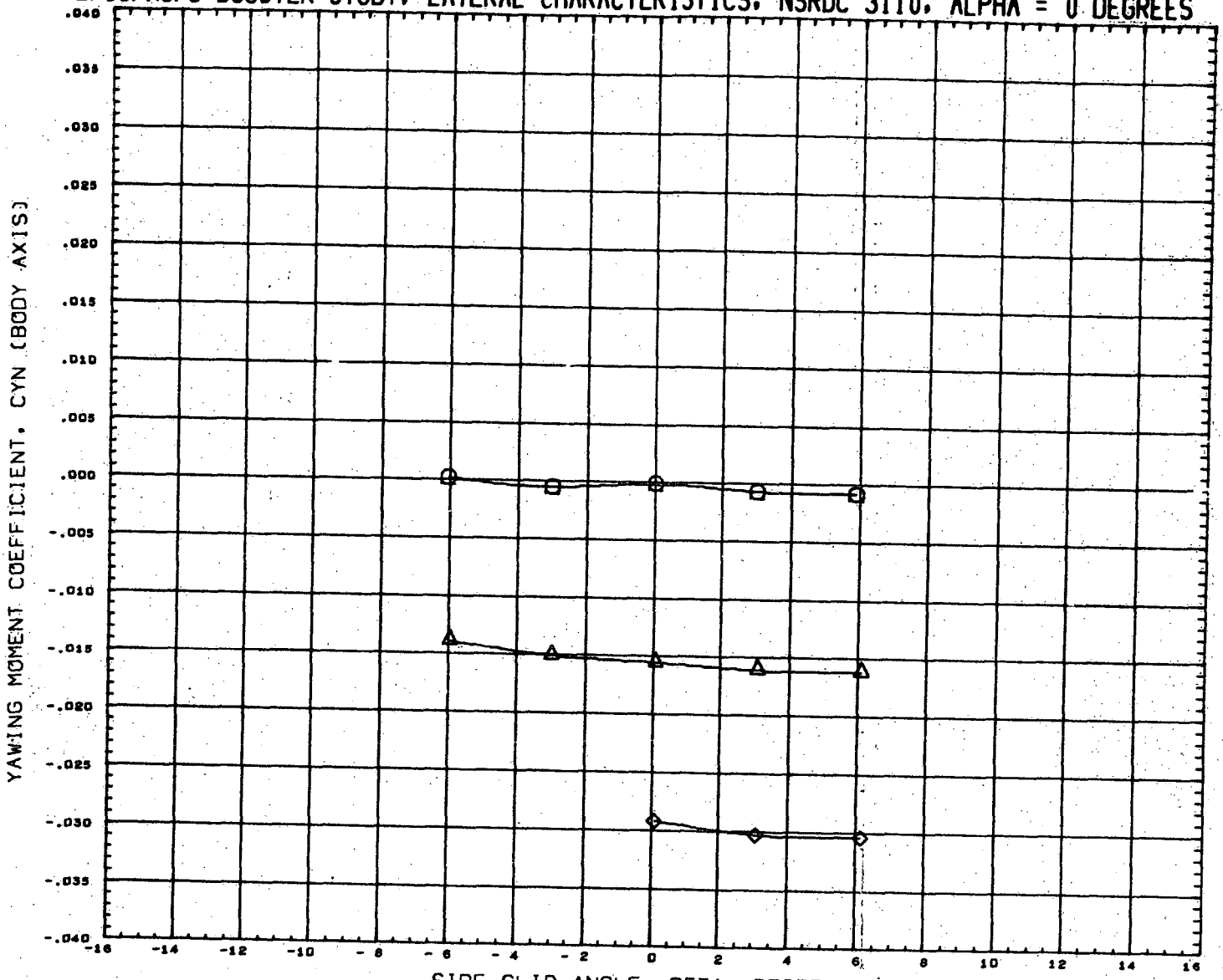
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2362)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2430)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2434)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	10.000	1.000
10.000	20.000	10.000	1.000
20.000	20.000	10.000	1.000

MACH 0.383

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES

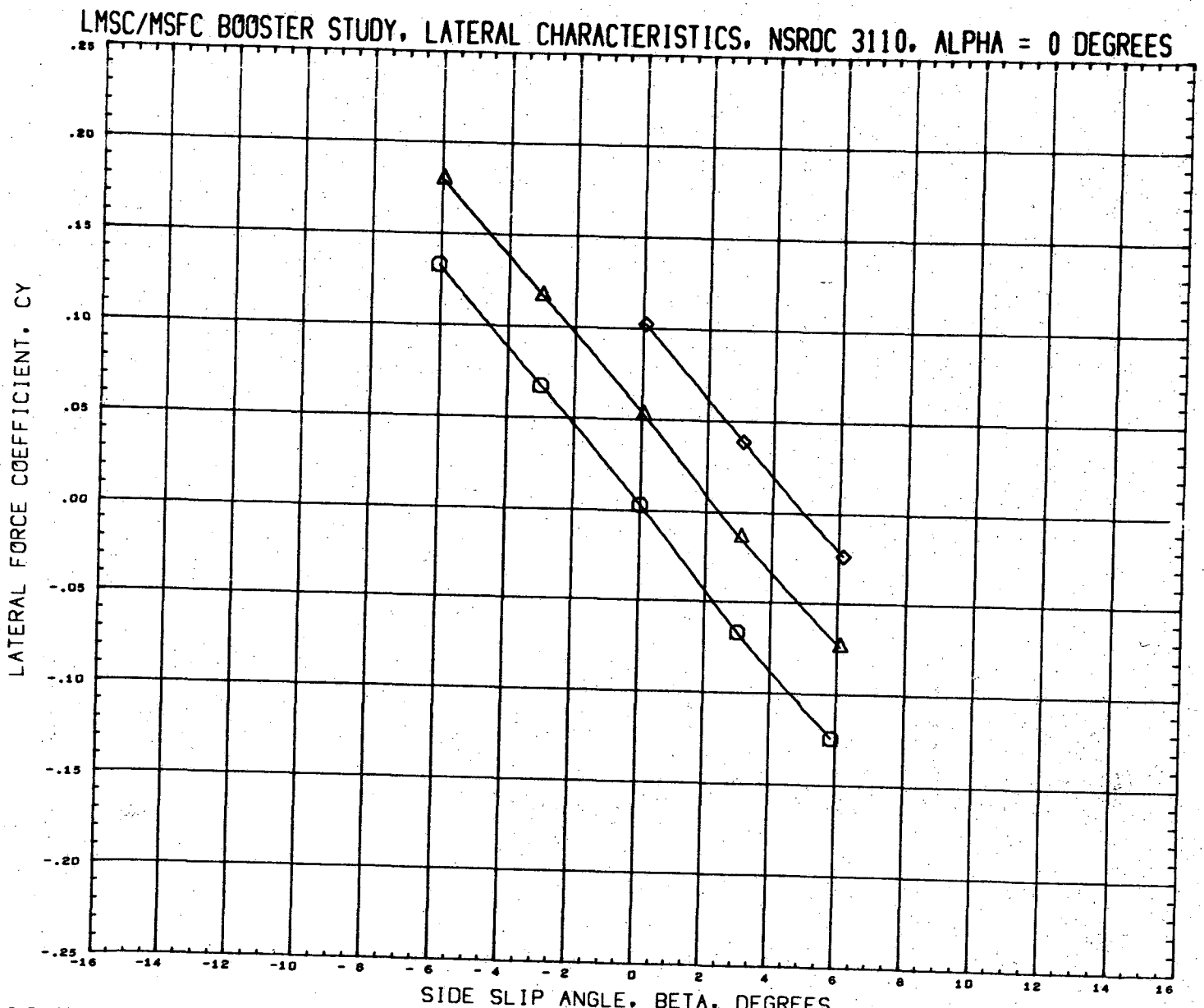


DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2362)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2430)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2434)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	10.000	1.000
10.000	20.000	10.000	1.000
20.000	20.000	10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.383



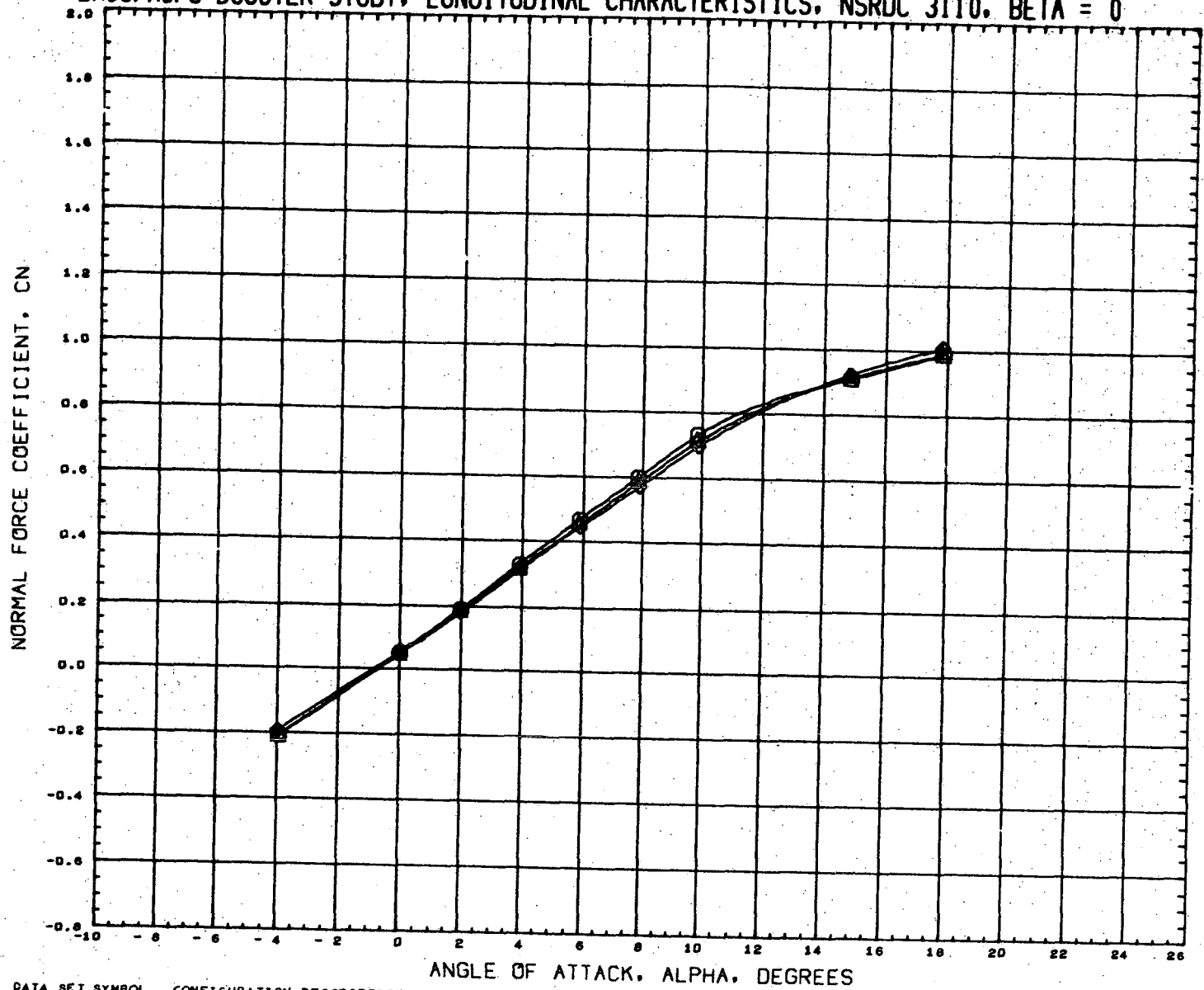
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2362)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2430)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1
(RN2434)	NSRDC-3110,MSFC/LMSC BOOSTER B1C2F2W1V1

AILRON	CANARD	ELEVTR	CNDPOS
0.000	20.000	10.000	1.000
10.000	20.000	10.000	1.000
20.000	20.000	10.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.383

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



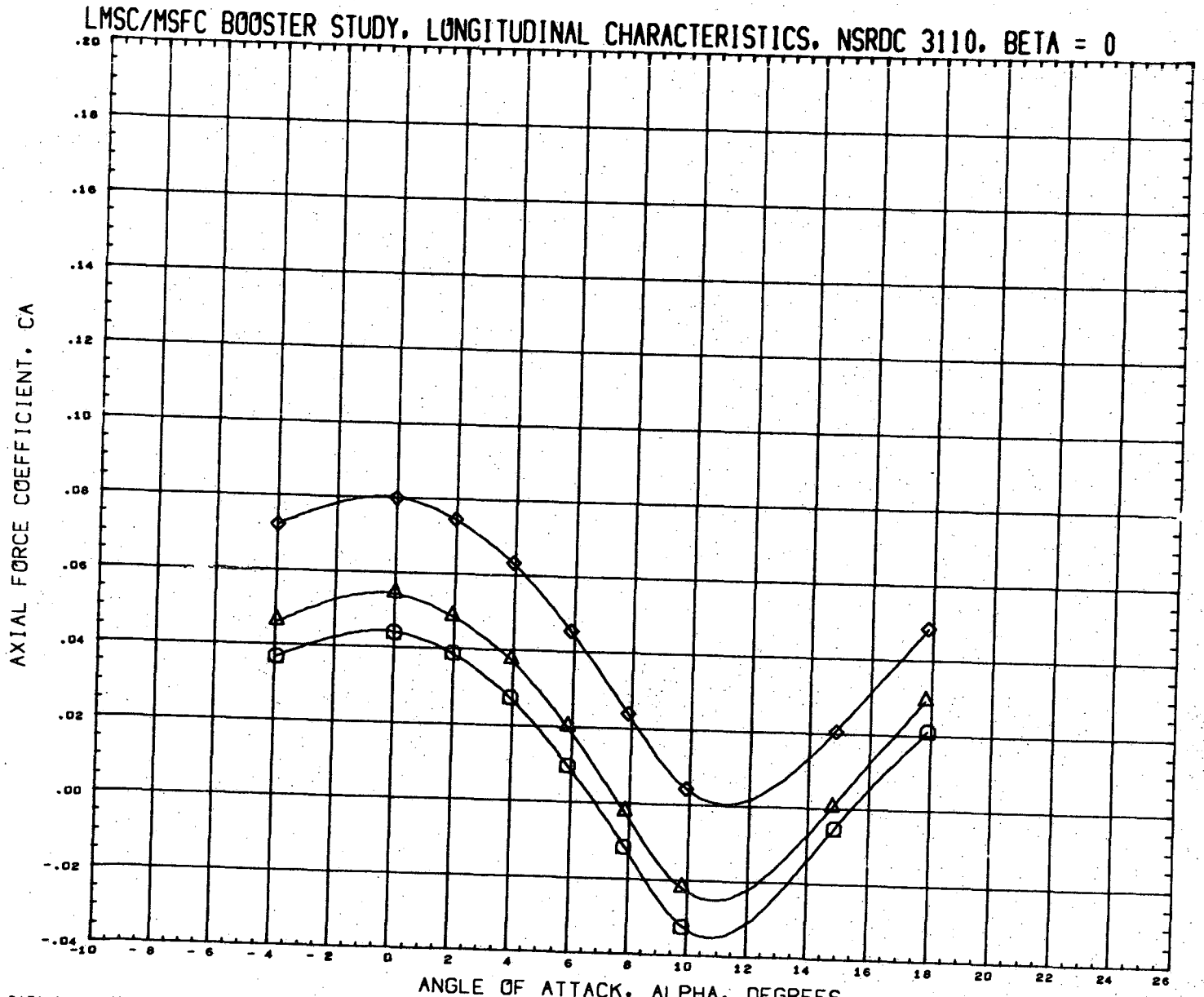
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2465)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2481)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2485)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2465) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2481) △	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2485) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

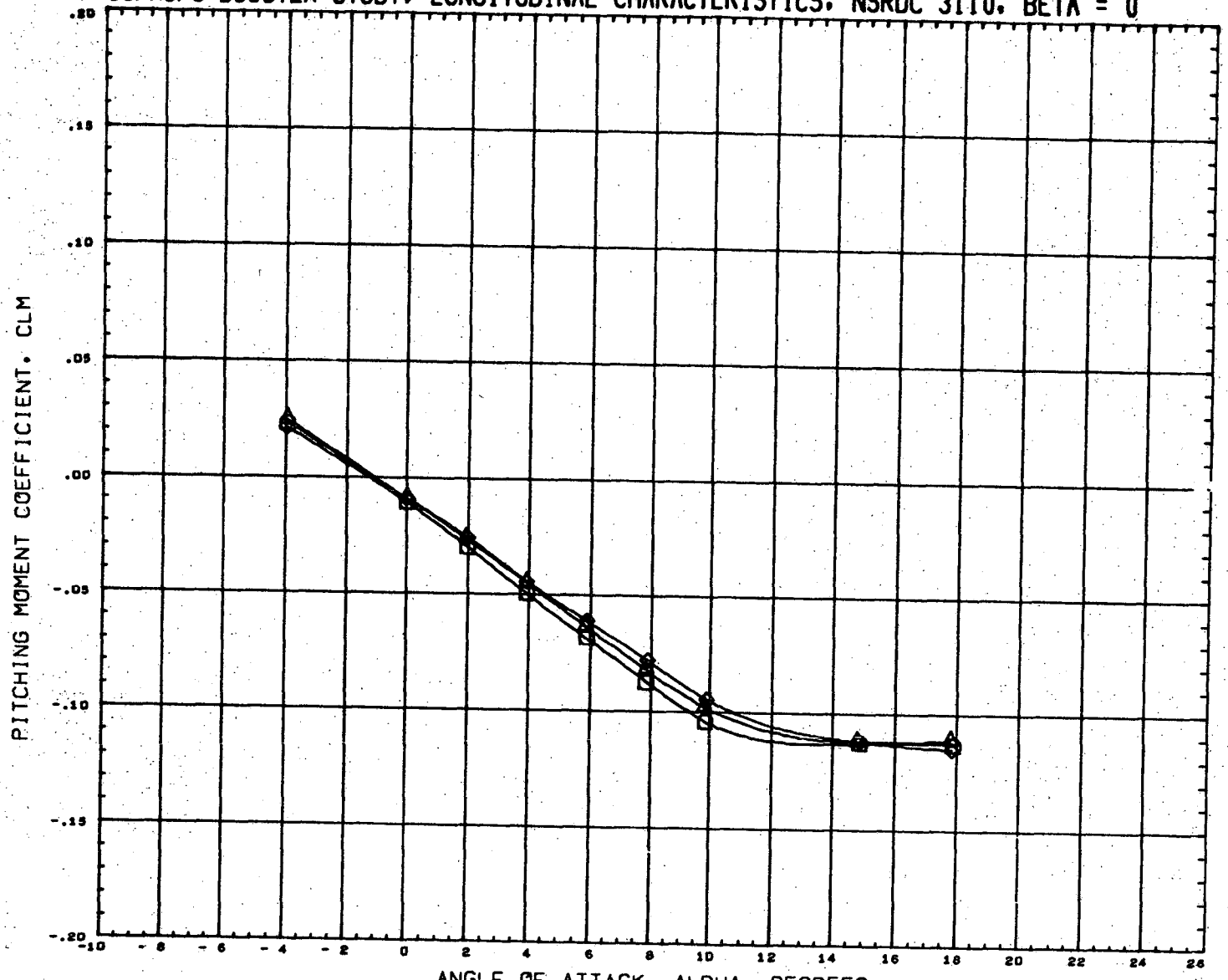
MACH 0.381

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



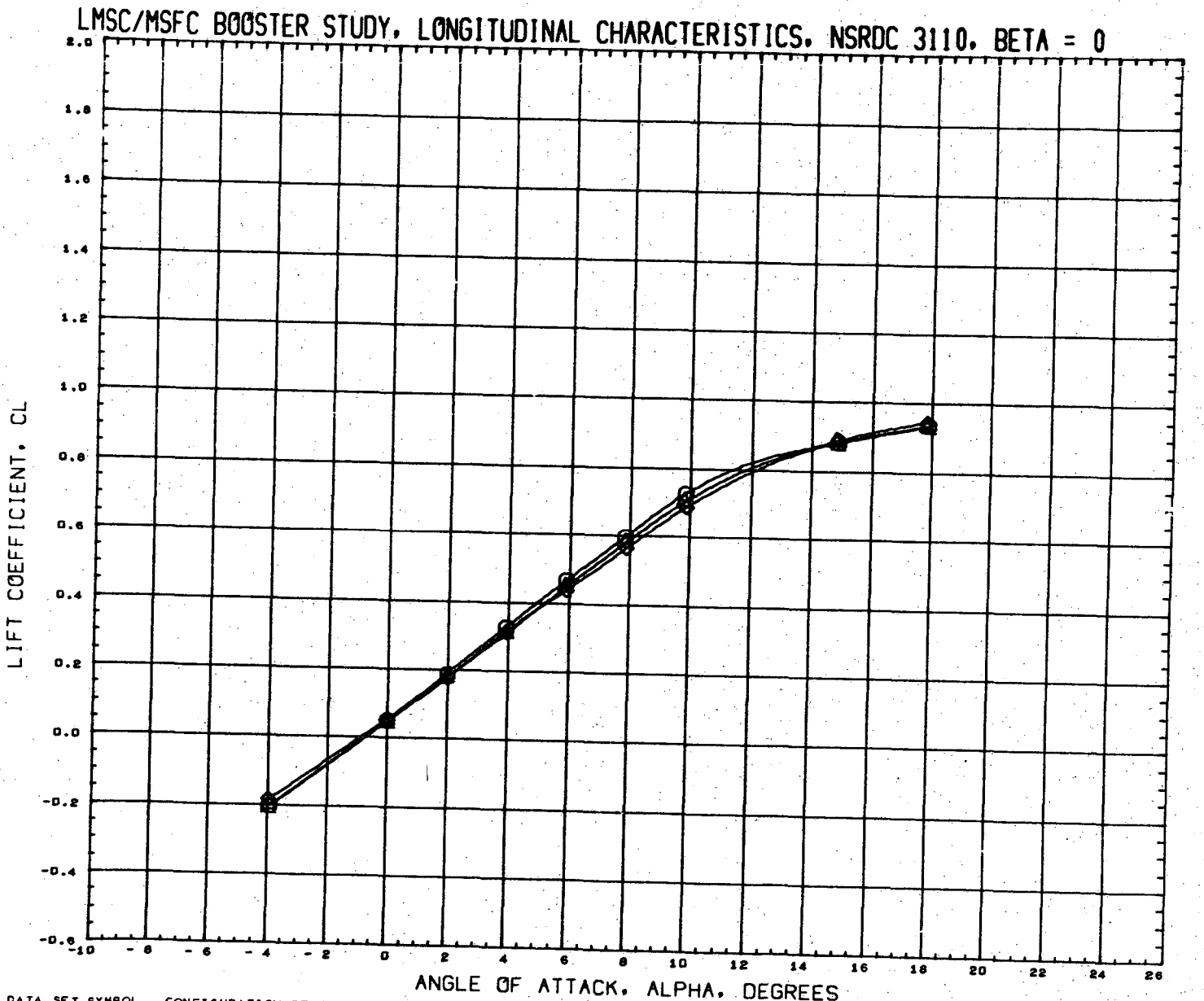
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2465)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2481)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2485)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2465) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2481) △	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2485) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

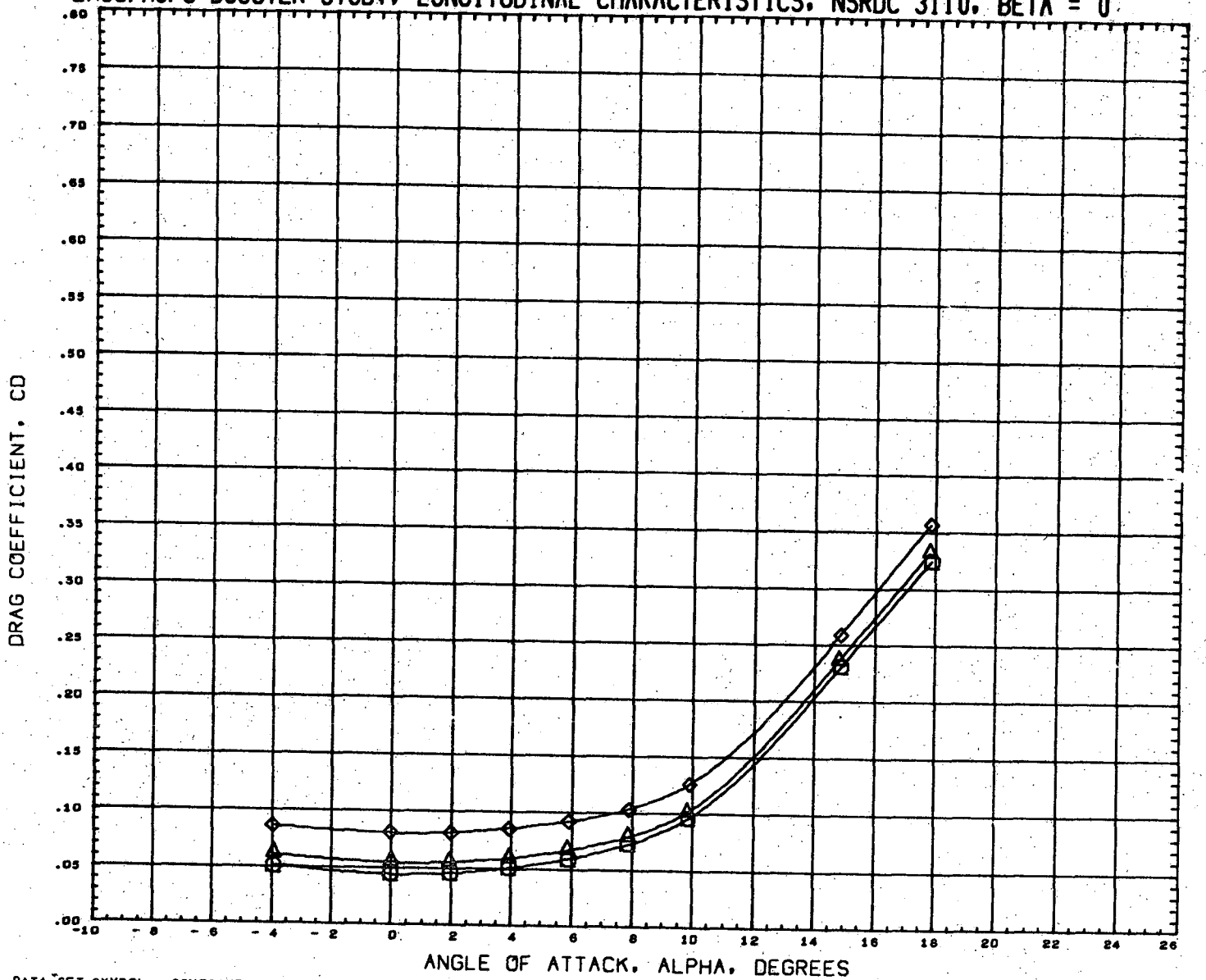
AILRON	ELEVTR	INCIDW	WNGPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2465)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2481)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2485)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

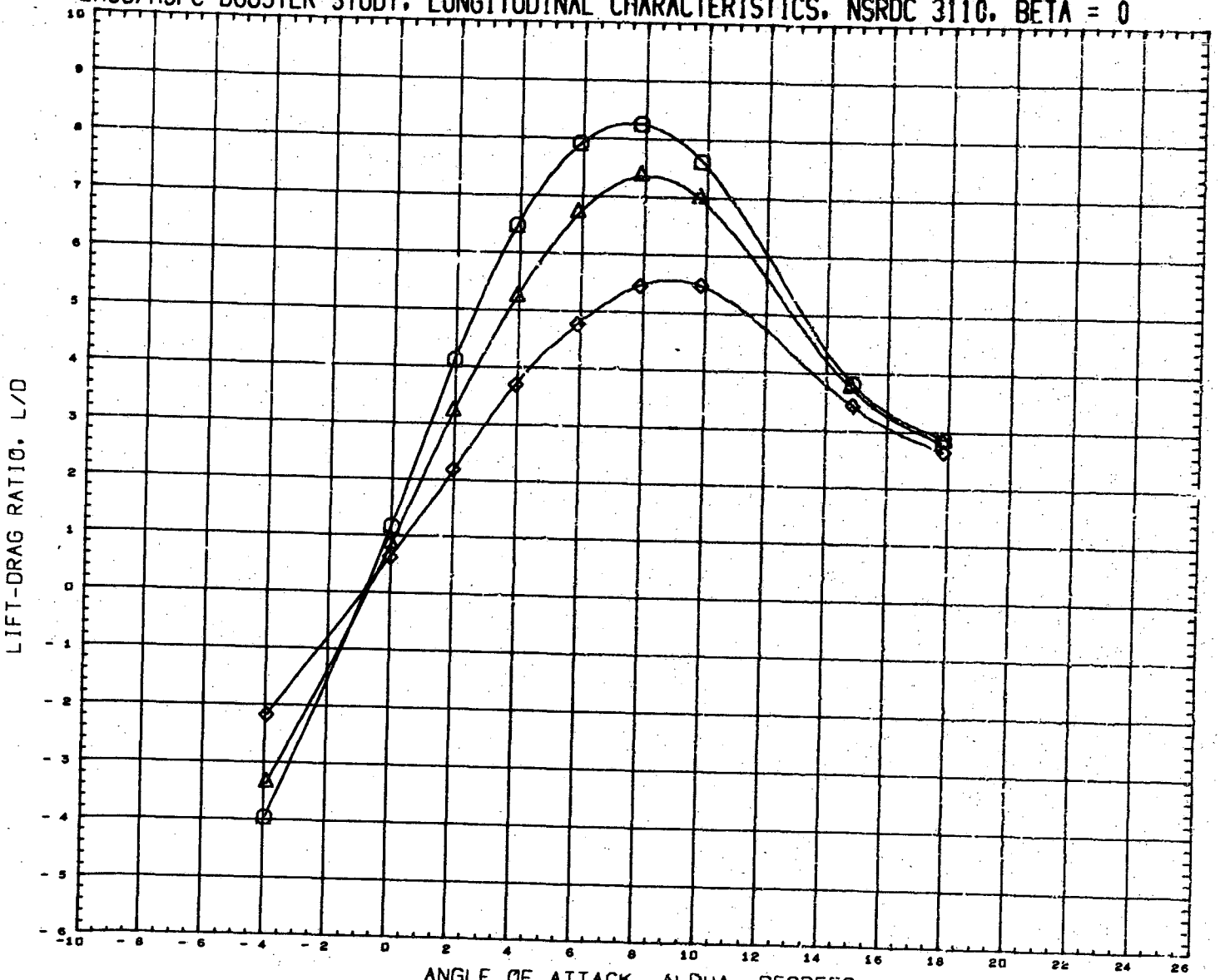
AILRON	ELEVTR	INCIDW	WNGPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2465)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2481)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2485)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

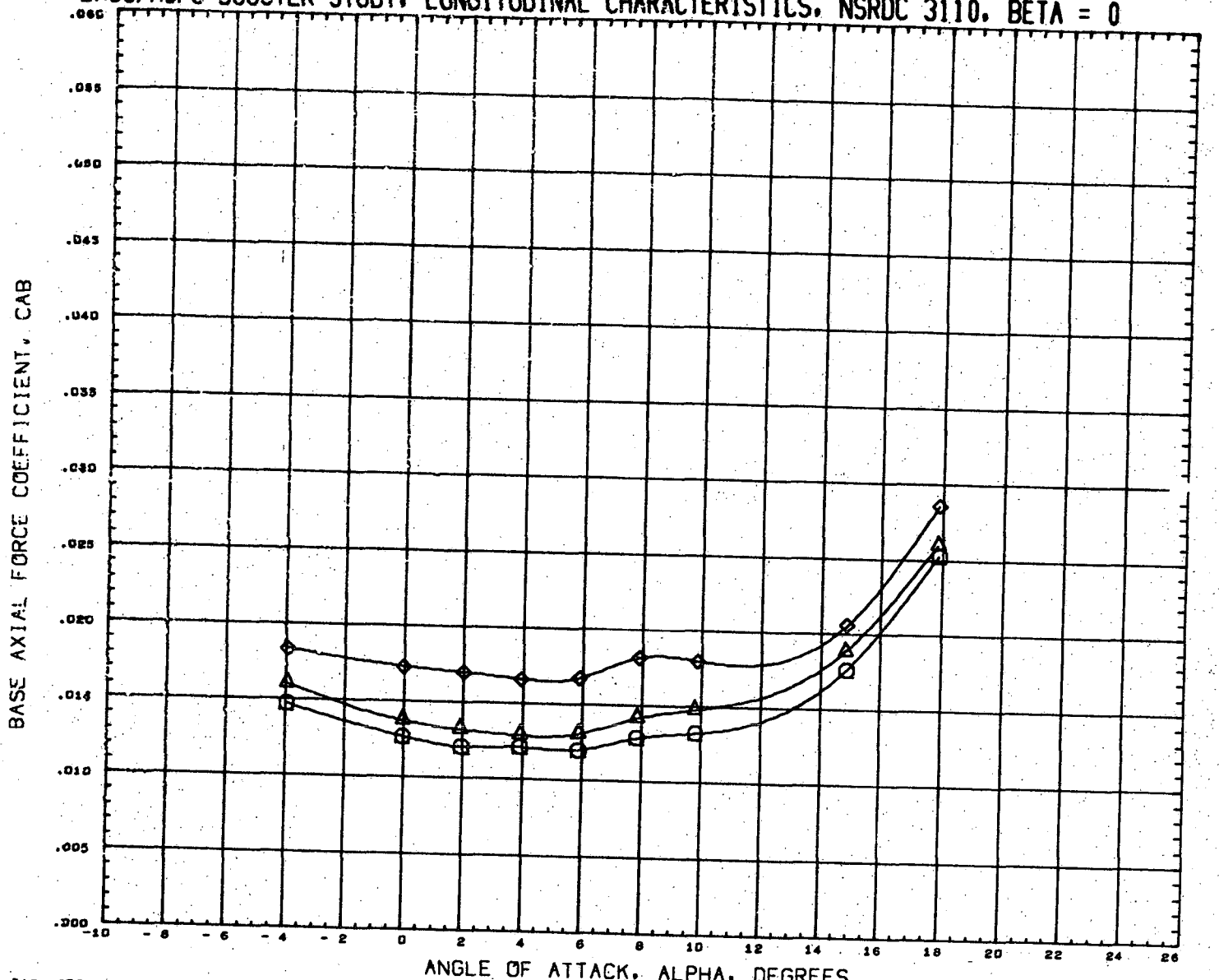
AILRON	ELEVTR	INCIDW	WNGPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BMEF	41.4360	INCHES
XMRP	32.1480	INCHES
YMRP	0.0000	INCHES
ZMRF	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



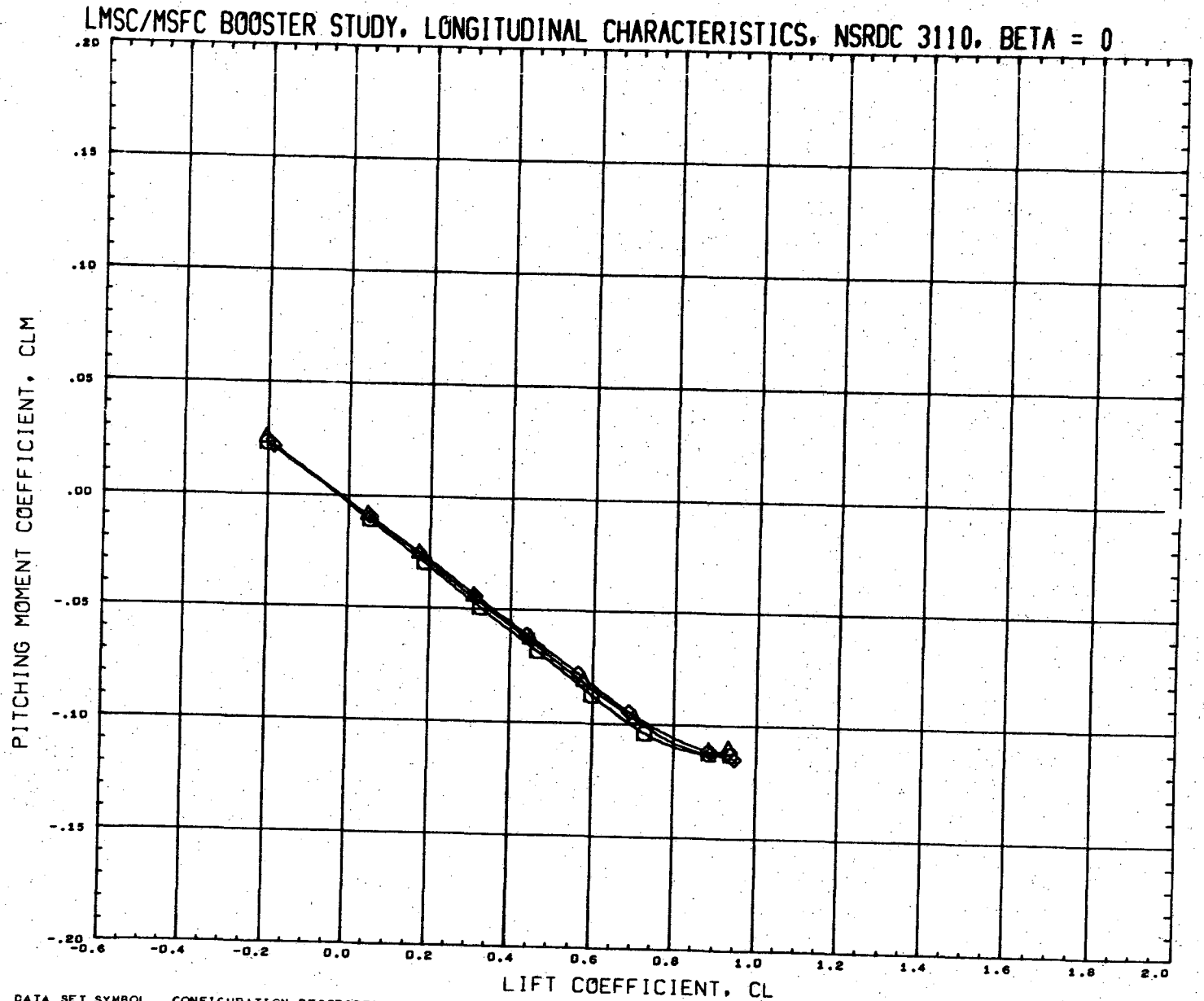
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2465) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2481) △	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2485) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381



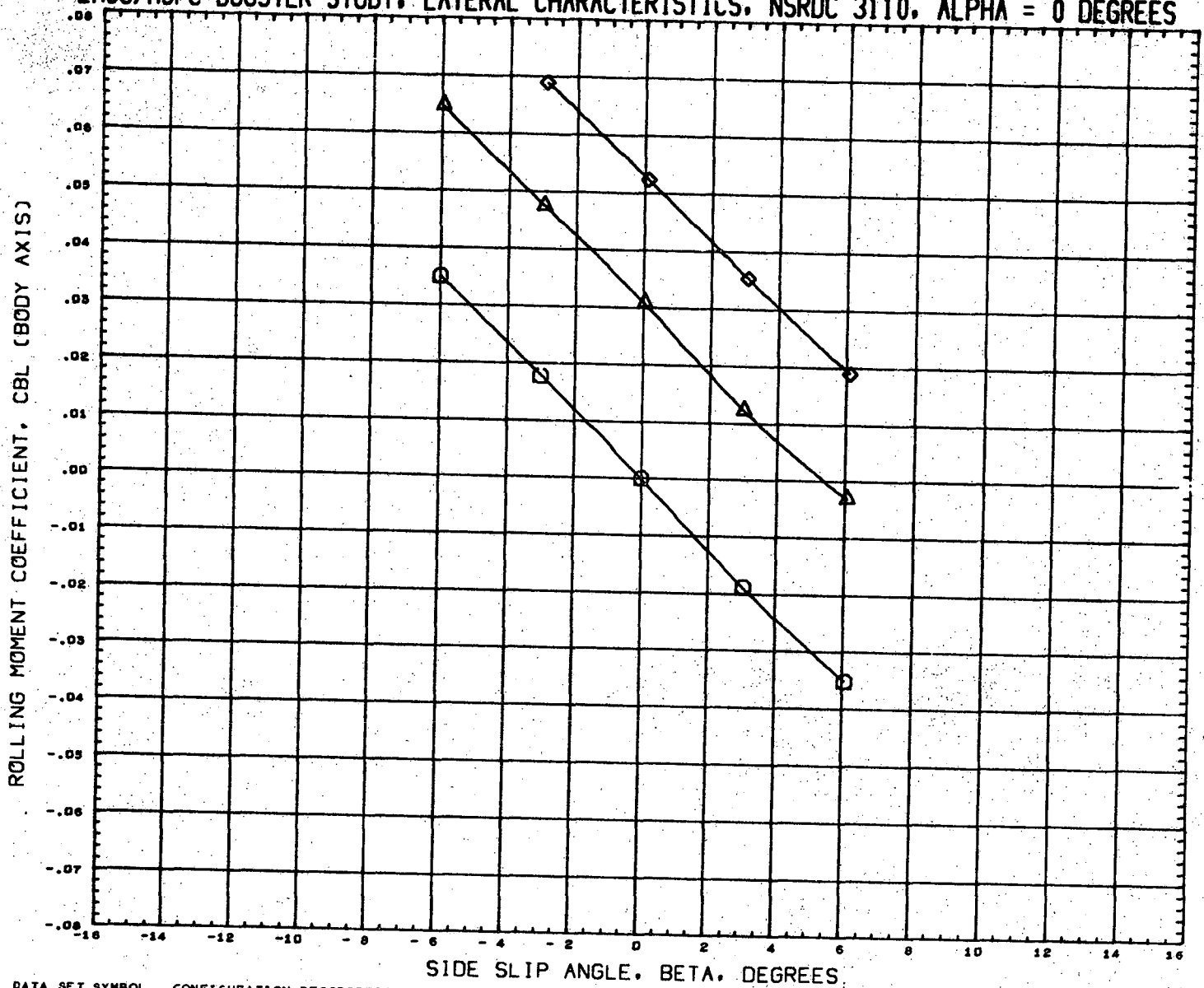
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2465)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2481)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2485)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

MACH 0.381

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2466)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2462)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2486)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

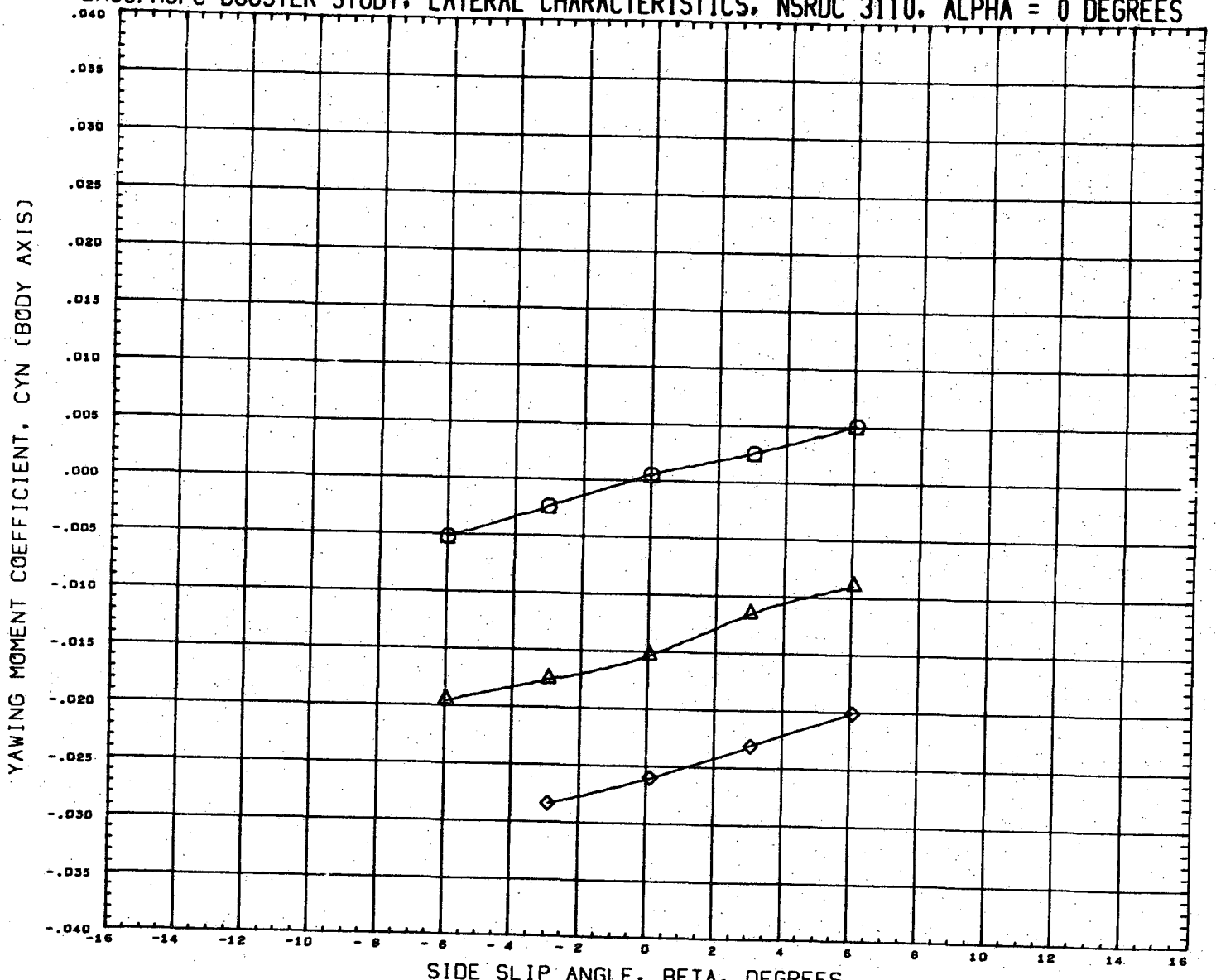
AILRON	ELEVTR	INCIDW	WNGPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2466)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2482)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2486)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

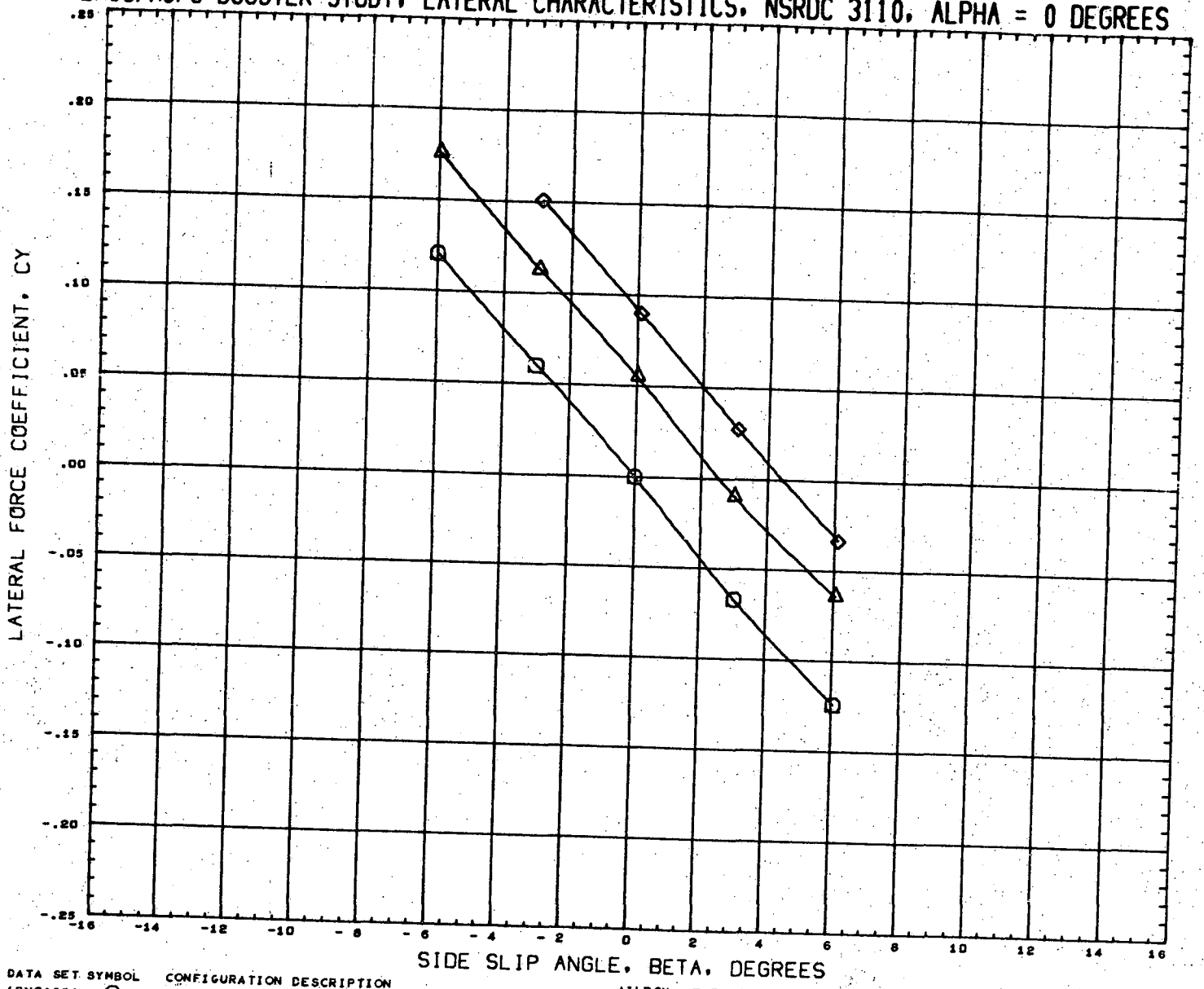
AILRON	ELEVTR	INCIDW	WNGPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

MACH 0.381

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



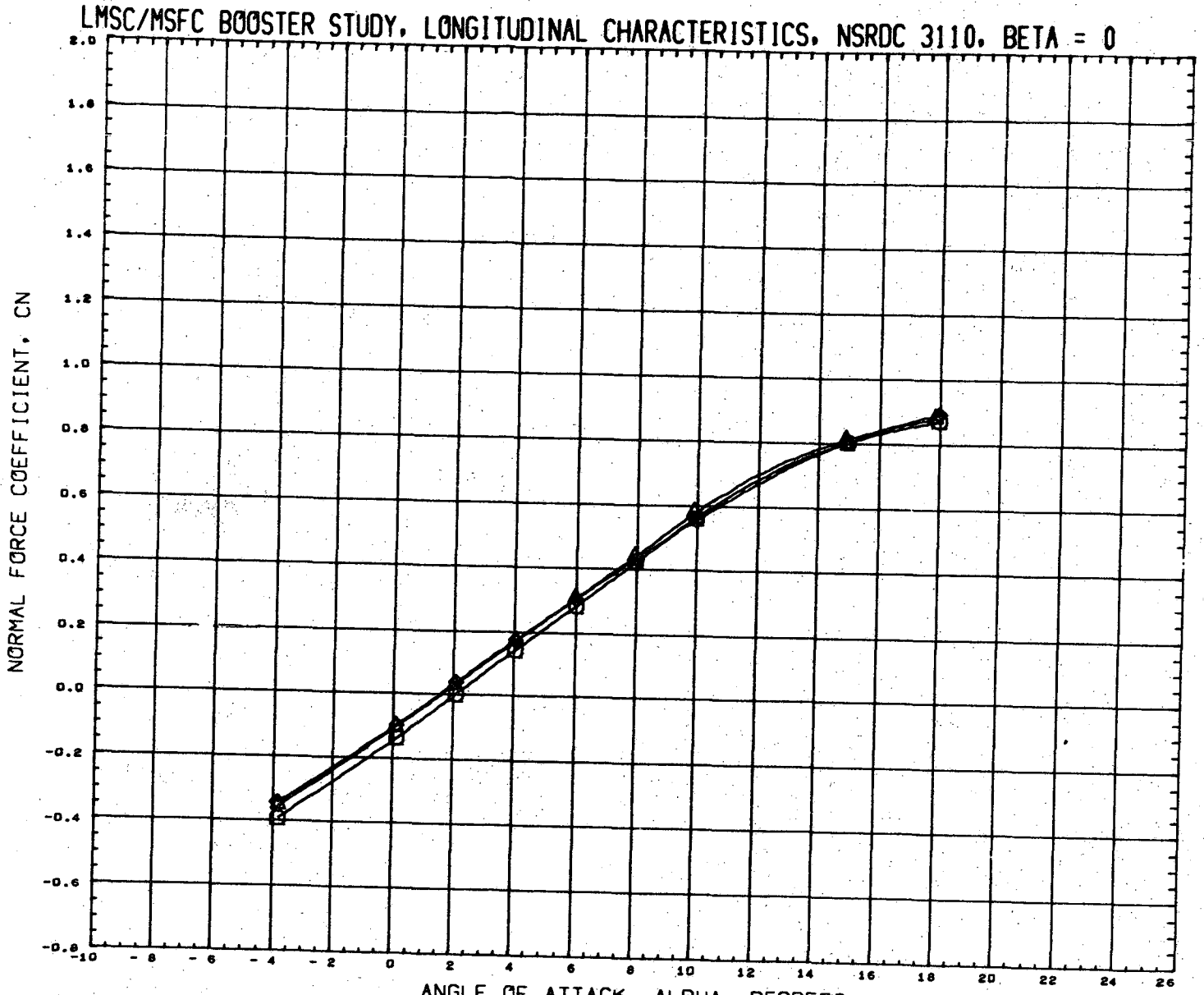
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2466)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2482)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2486)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	0.000	0.000	1.000
10.000	0.000	0.000	1.000
20.000	0.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.381



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2461)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2489)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2493)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	-10.000	0.000	1.000
10.000	-10.000	0.000	1.000
20.000	-10.000	0.000	1.000

MACH 0.382

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

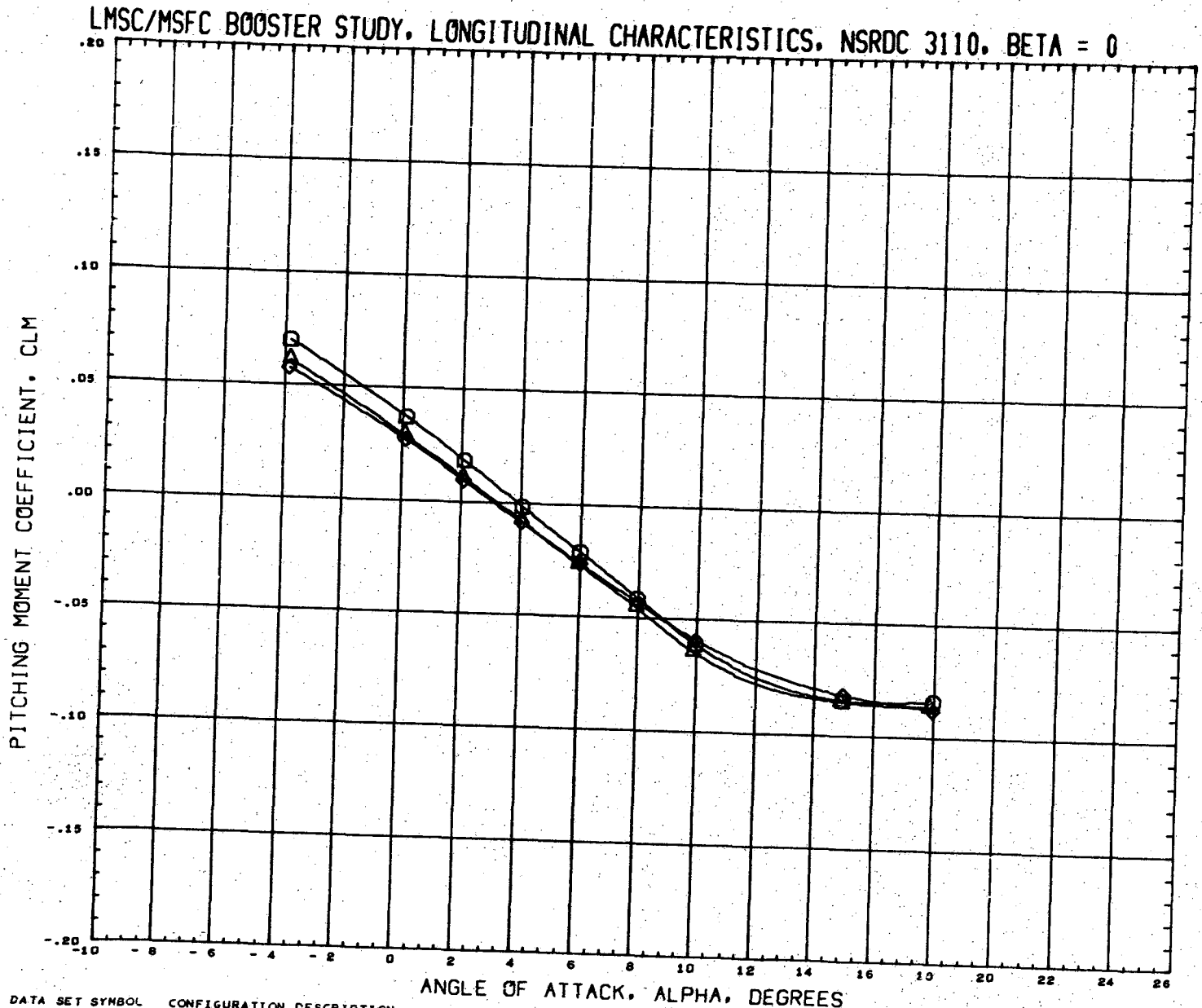
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2461) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2489) △	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2493) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	-10.000	0.000	1.000
10.000	-10.000	0.000	1.000
20.000	-10.000	0.000	1.000

MACH 0.382

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2461)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2489)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2493)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

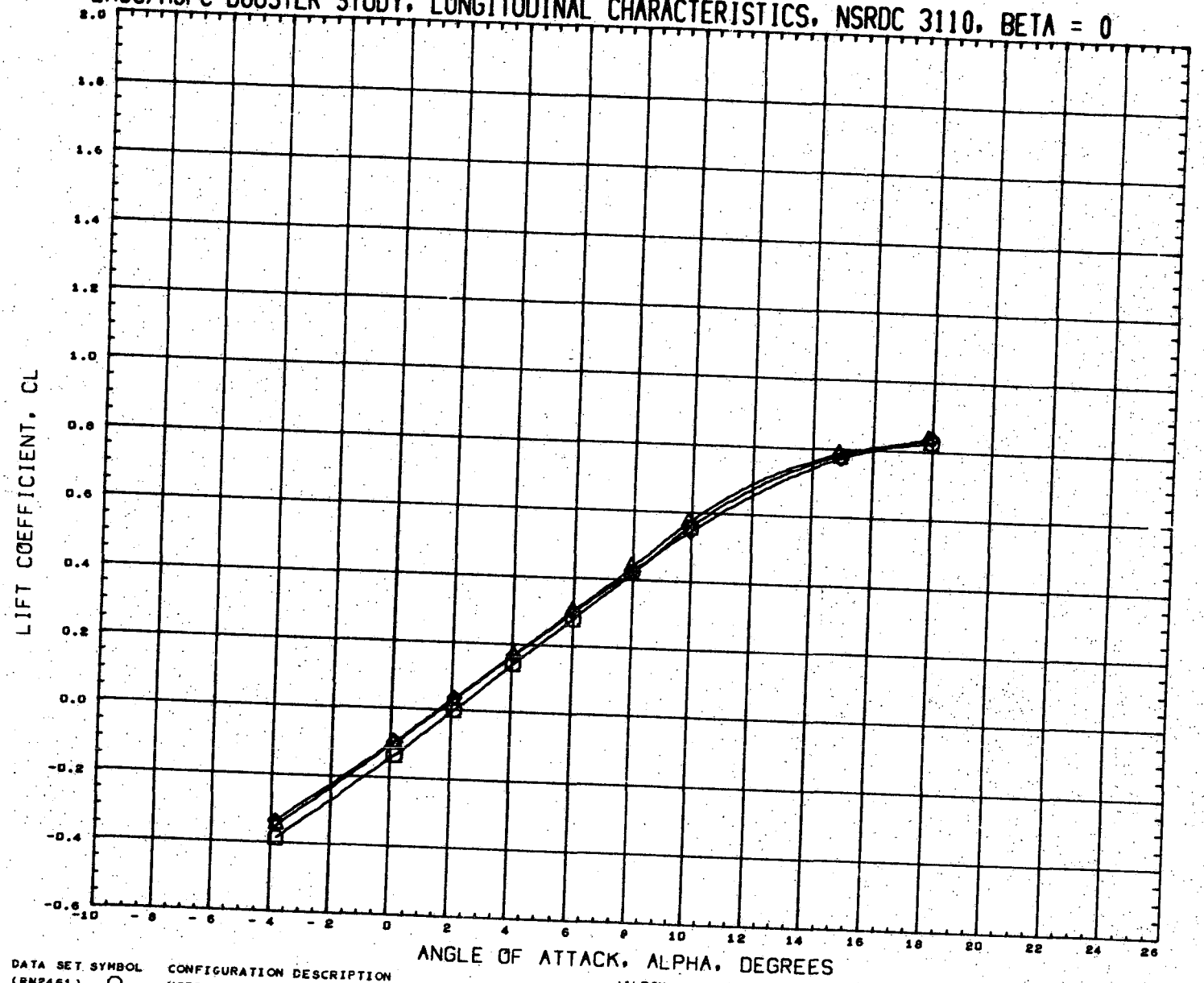
AILRON	ELEVTR	INCIDW	WNGPOS
0.000	-10.000	0.000	1.000
10.000	-10.000	0.000	1.000
20.000	-10.000	0.000	1.000

MACH 0.382

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2461)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2489)	⊠	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2493)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

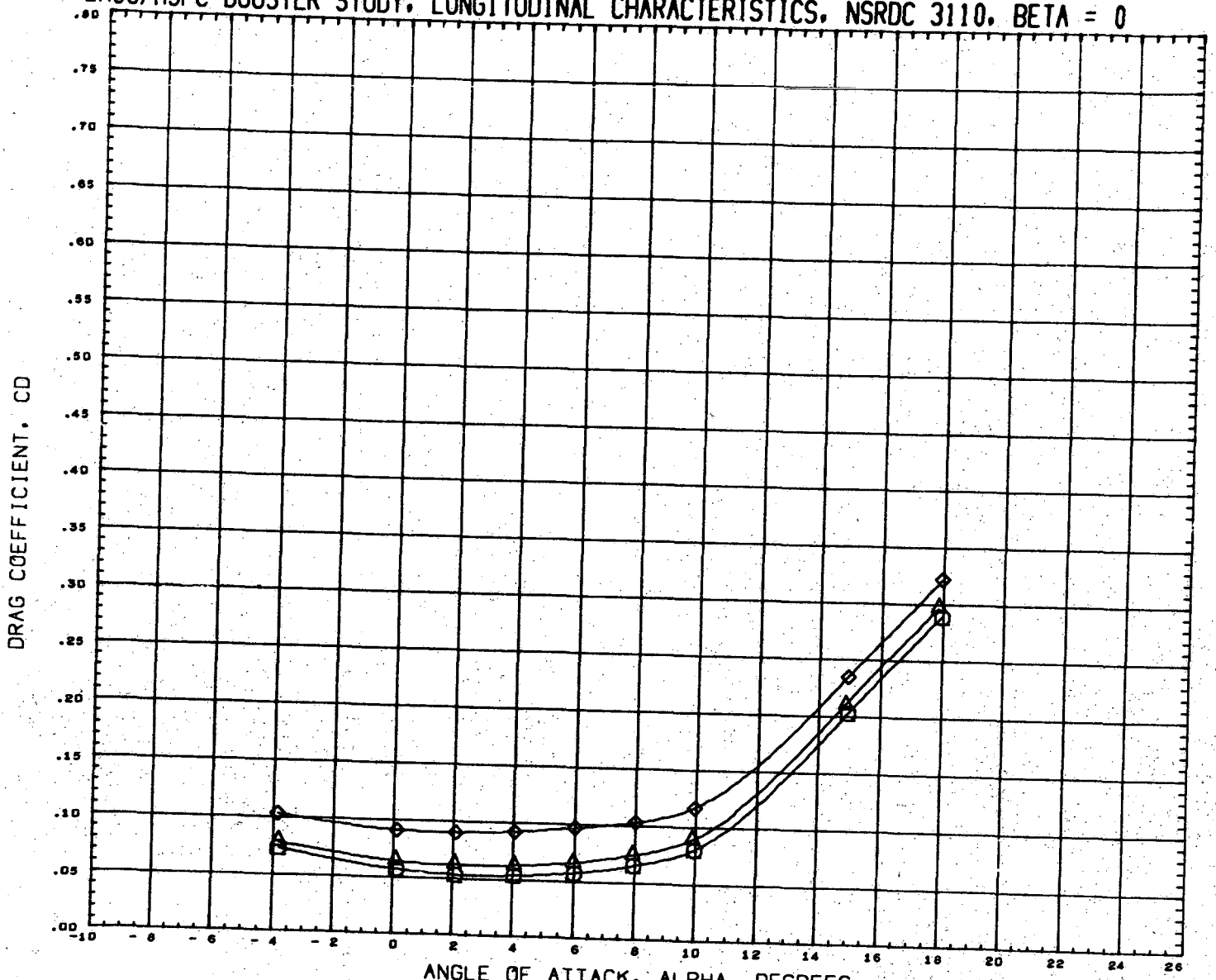
AILRON	ELEVTR	INCIDW	WNGPOS
0.000	-10.000	0.000	1.000
10.000	-10.000	0.000	1.000
20.000	-10.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0



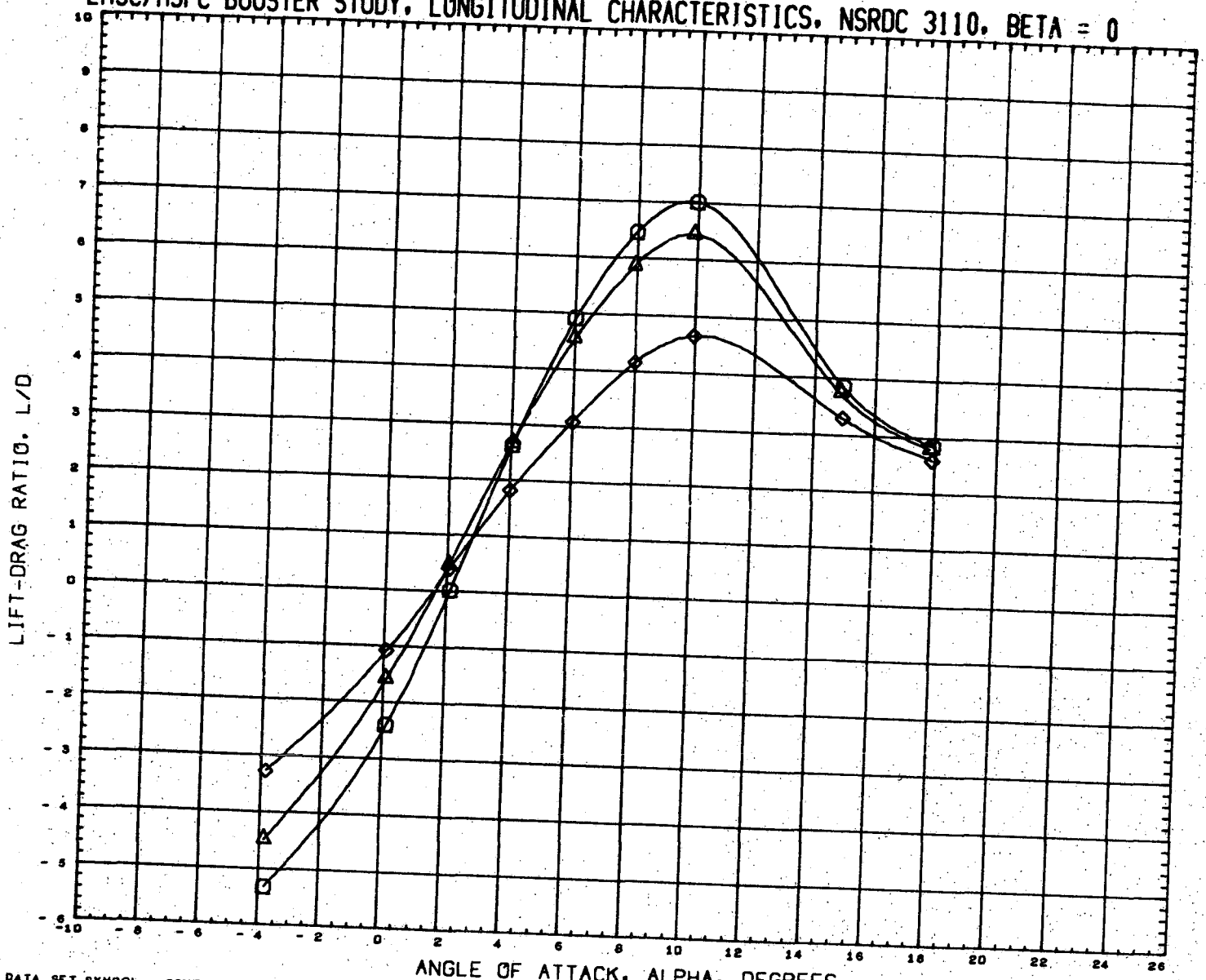
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2461)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2489)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2493)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	-10.000	0.000	1.000
10.000	-10.000	0.000	1.000
20.000	-10.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382


LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0
LIFT-DRAG RATIO, L/D
ANGLE OF ATTACK, ALPHA, DEGREES

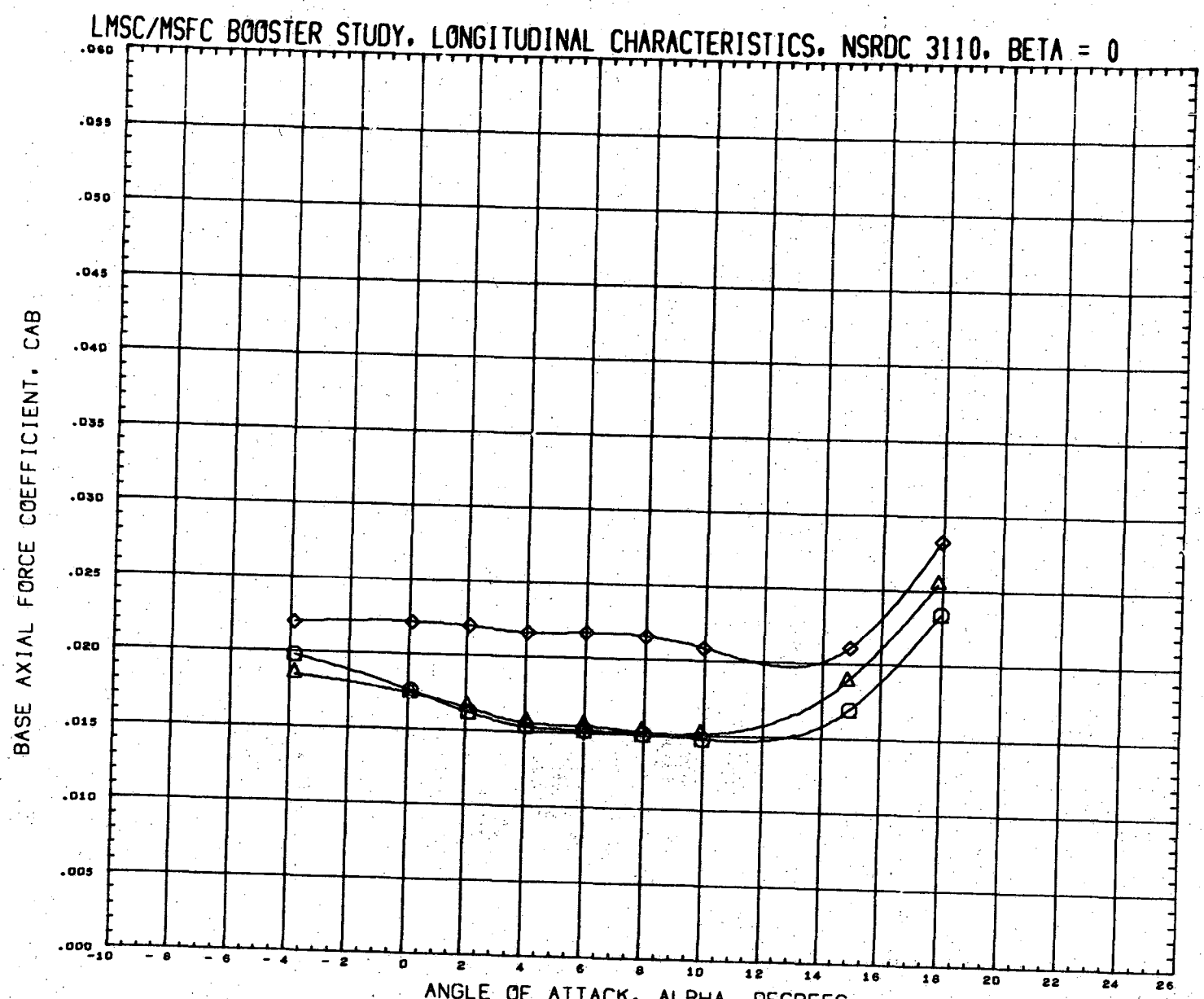
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2461)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2489)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2493)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	-10.000	0.000	1.000
10.000	-10.000	0.000	1.000
20.000	-10.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382



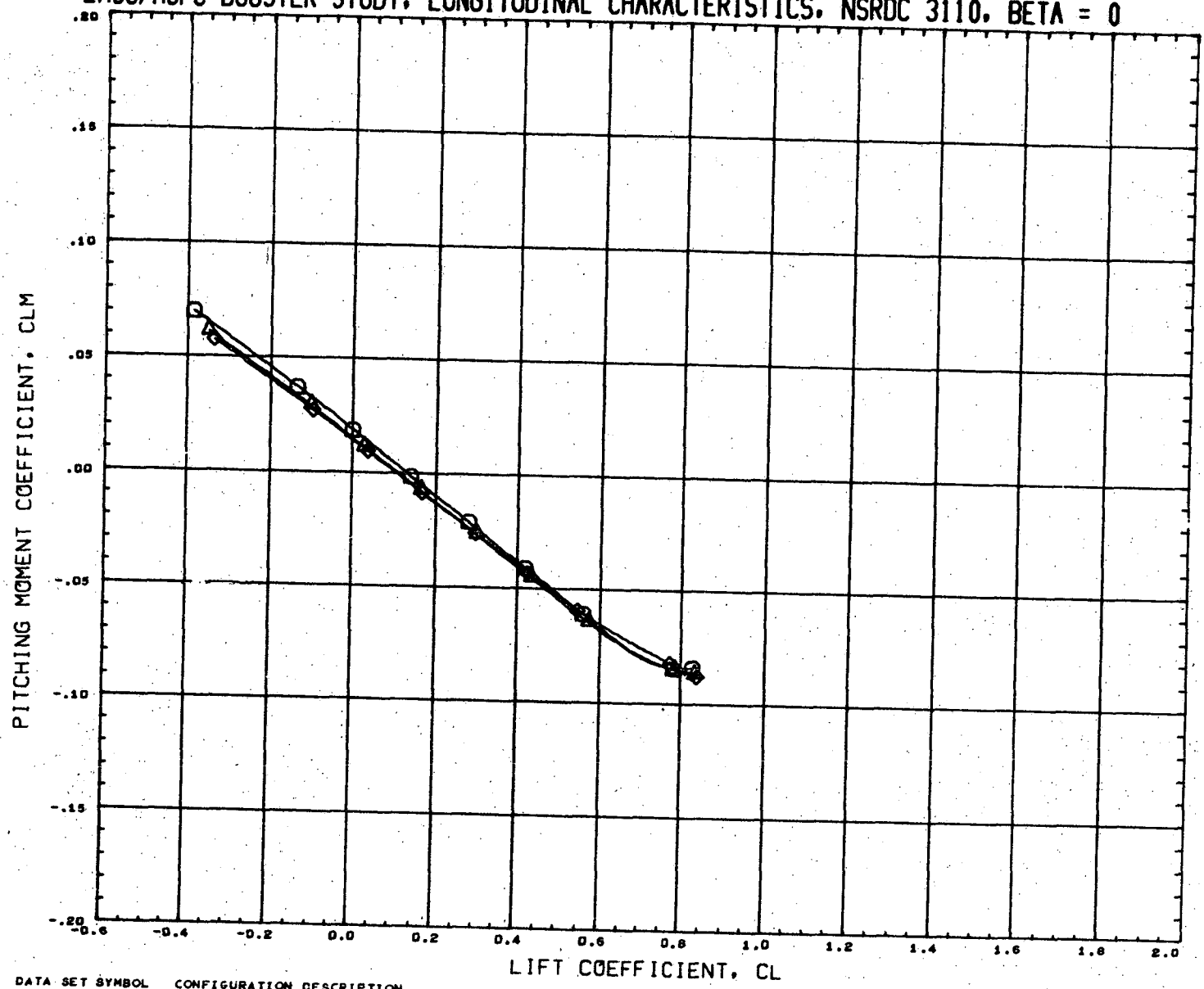
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2461) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2469) △	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2493) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	-10.000	0.000	1.000
10.000	-10.000	0.000	1.000
20.000	-10.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

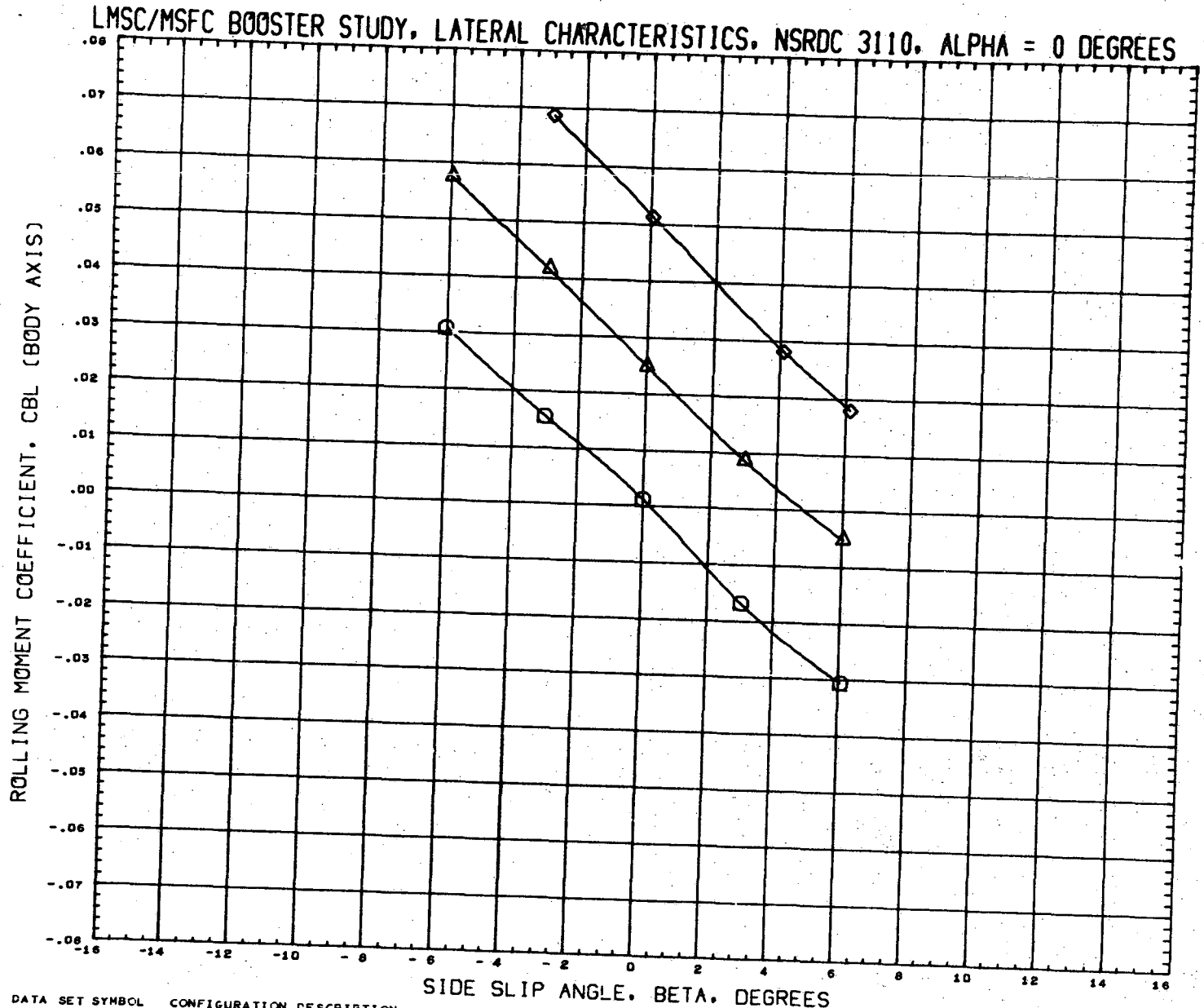


DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2461)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2469)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2493)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	-10.000	0.000	1.000
10.000	-10.000	0.000	1.000
20.000	-10.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382



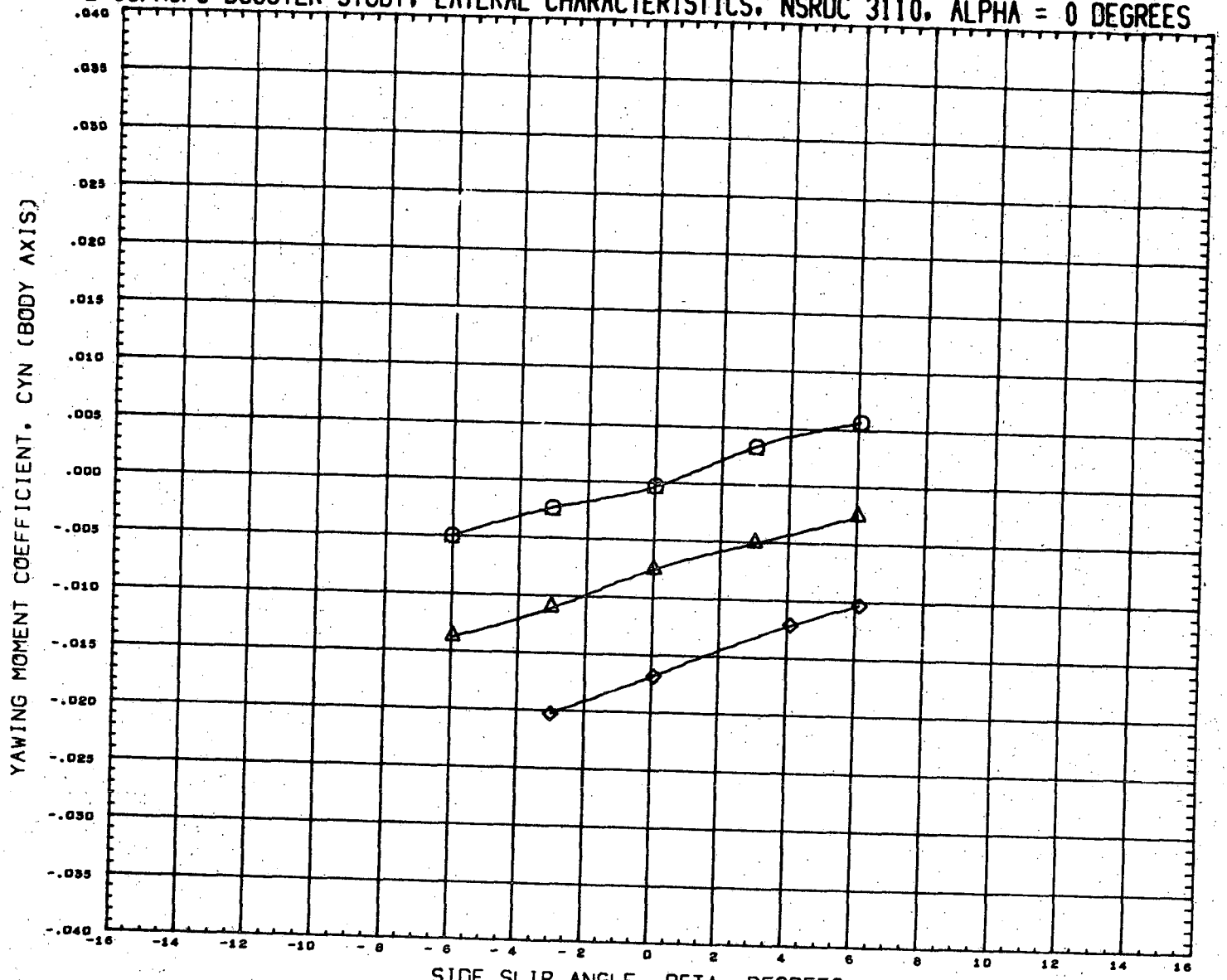
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2462) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2490) △	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2494) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	-10.000	0.000	1.000
10.000	-10.000	0.000	1.000
20.000	-10.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.382

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSROC 3110, ALPHA = 0 DEGREES



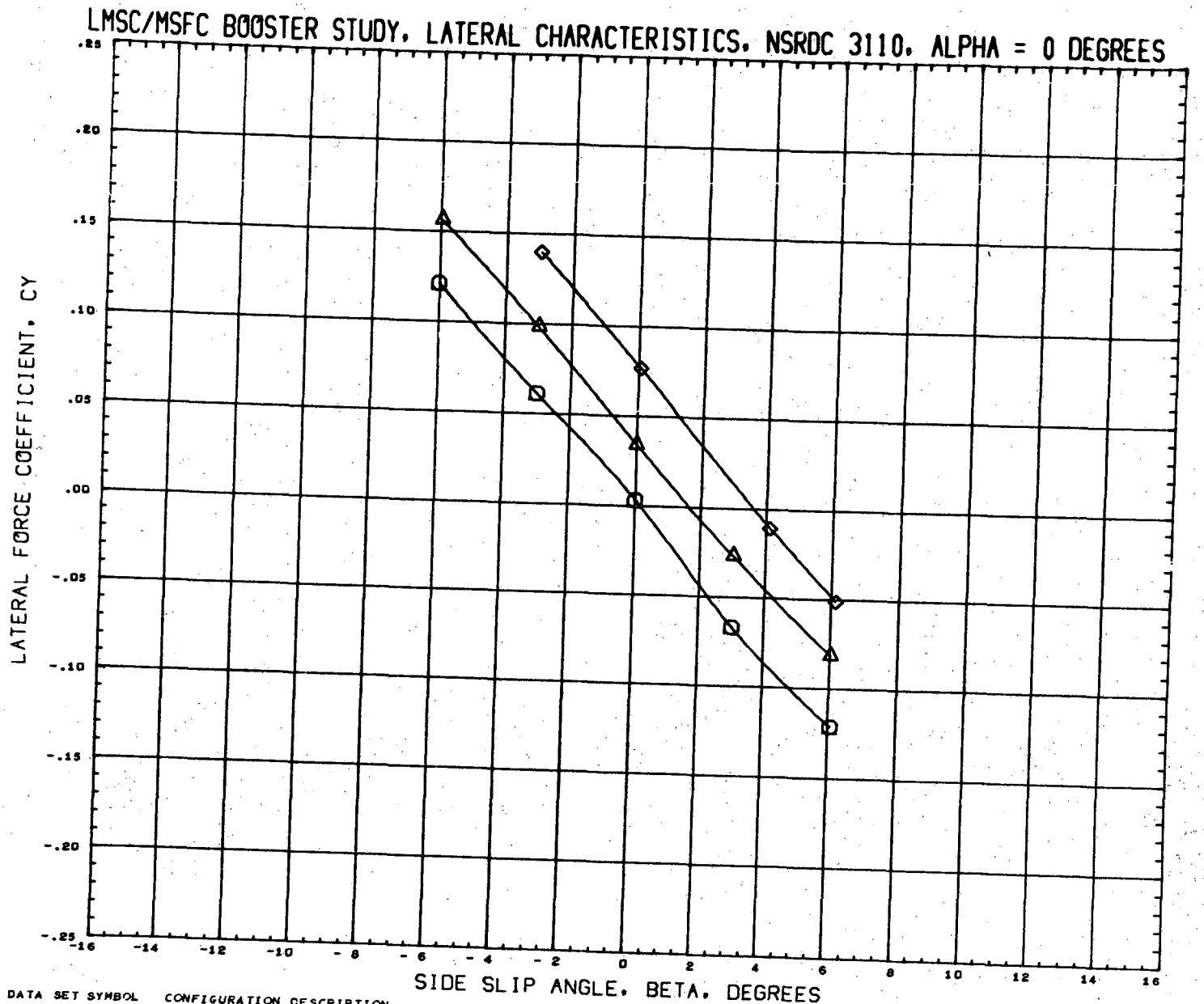
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2462)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2490)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2494)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

MACH 0.382

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	-10.000	0.000	1.000
10.000	-10.000	0.000	1.000
20.000	-10.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2462) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2490) △	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2494) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

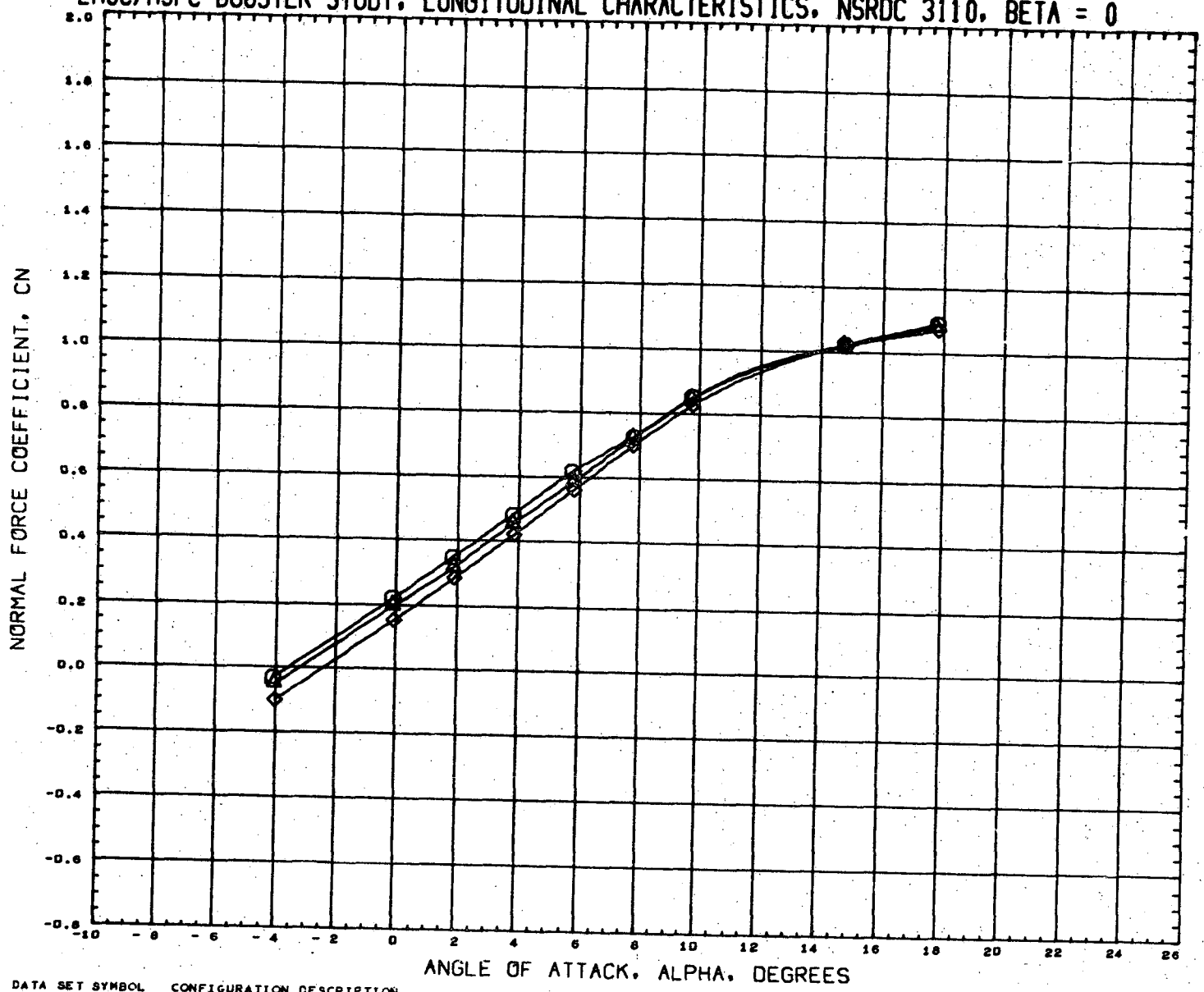
AILRON	ELEVTR	INCIDW	WNGPOS
0.000	-10.000	0.000	1.000
10.000	-10.000	0.000	1.000
20.000	-10.000	0.000	1.000

MACH 0.362

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2469)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2497)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2501)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

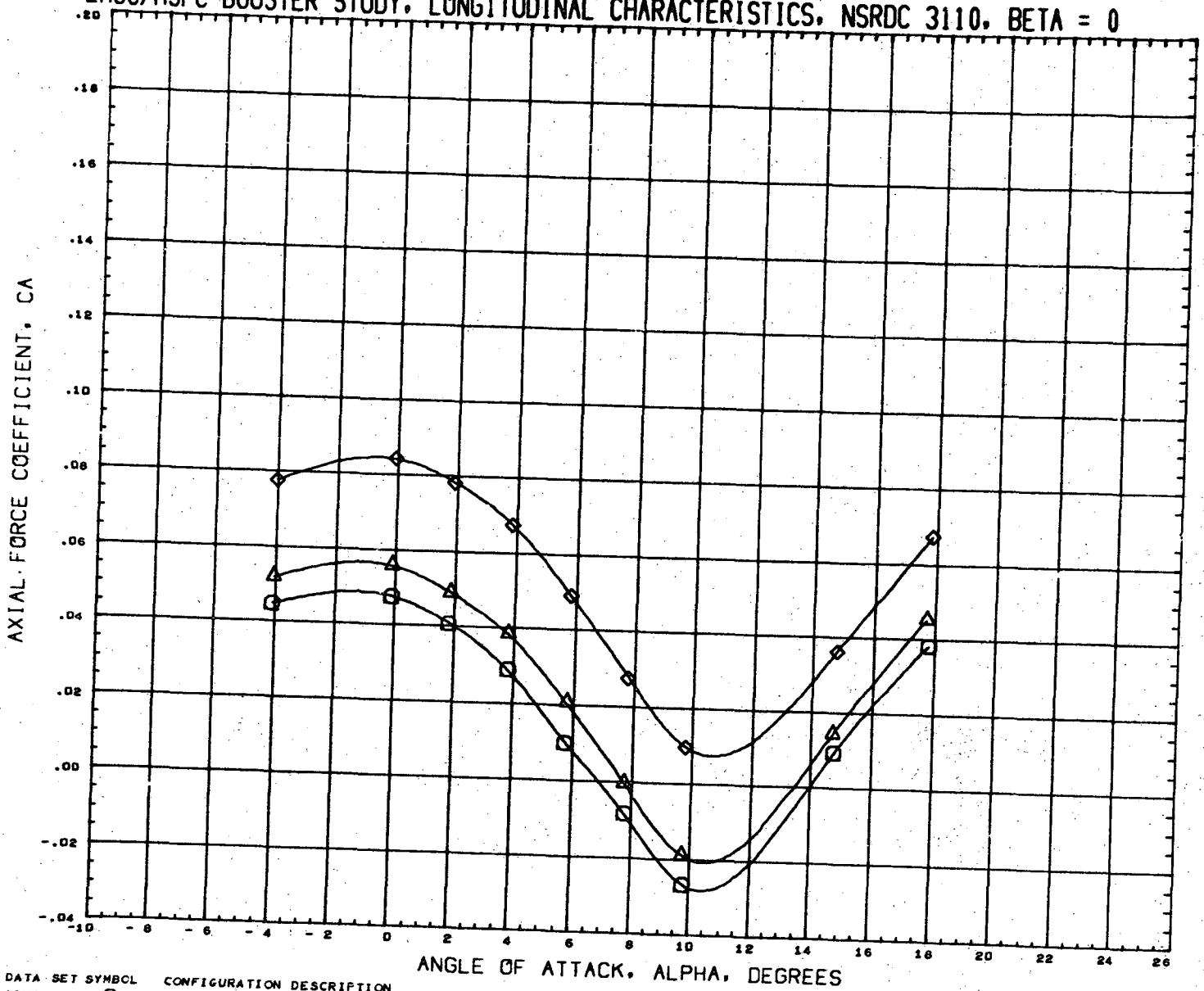
MACH 0.380

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	10.000	0.000	1.000
10.000	10.000	0.000	1.000
20.000	10.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2469)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2497)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2501)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

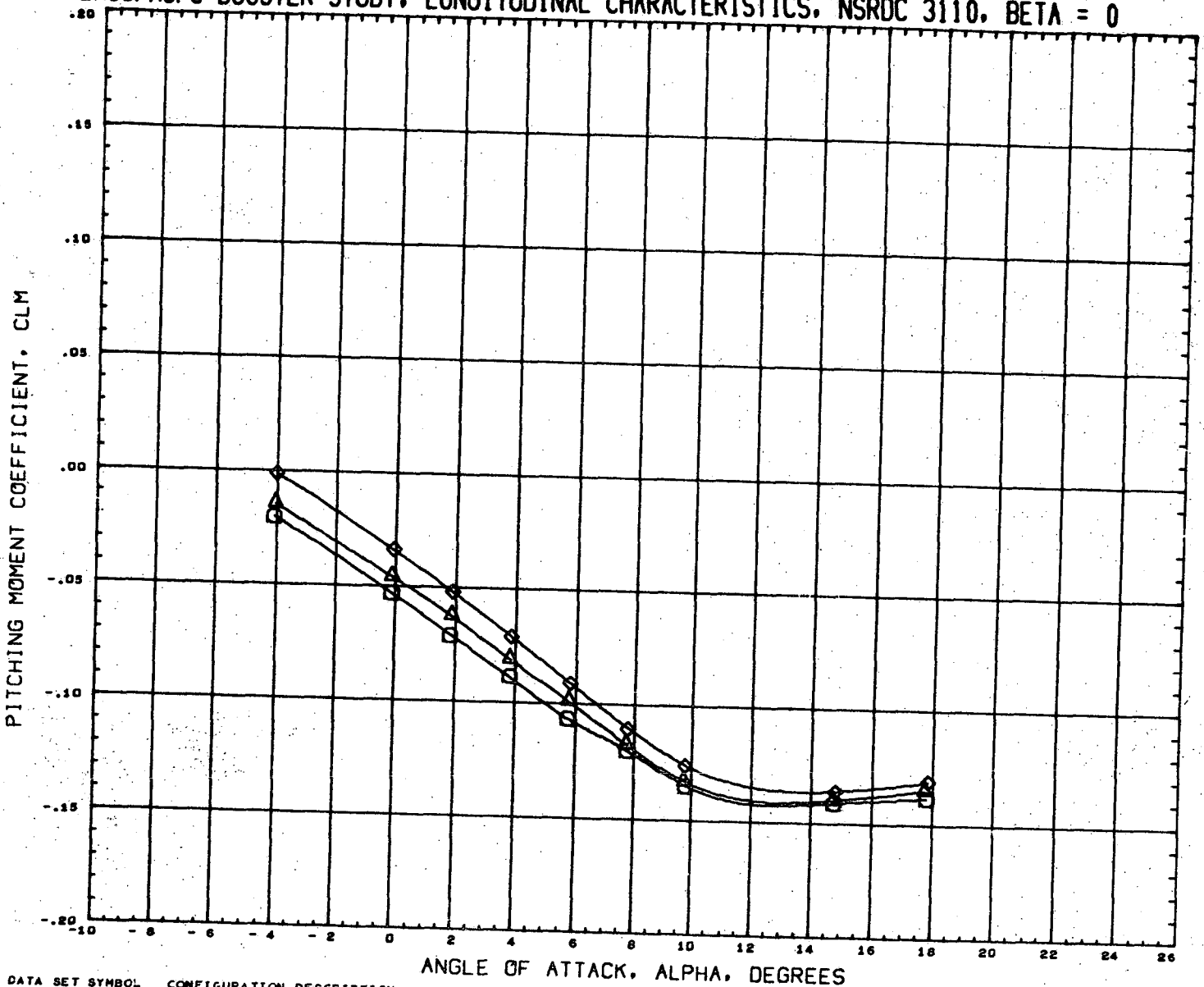
MACH 0.380

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	10.000	0.000	1.000
10.000	10.000	0.000	1.000
20.000	10.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY. LONGITUDINAL CHARACTERISTICS. NSRDC 3110. BETA = 0

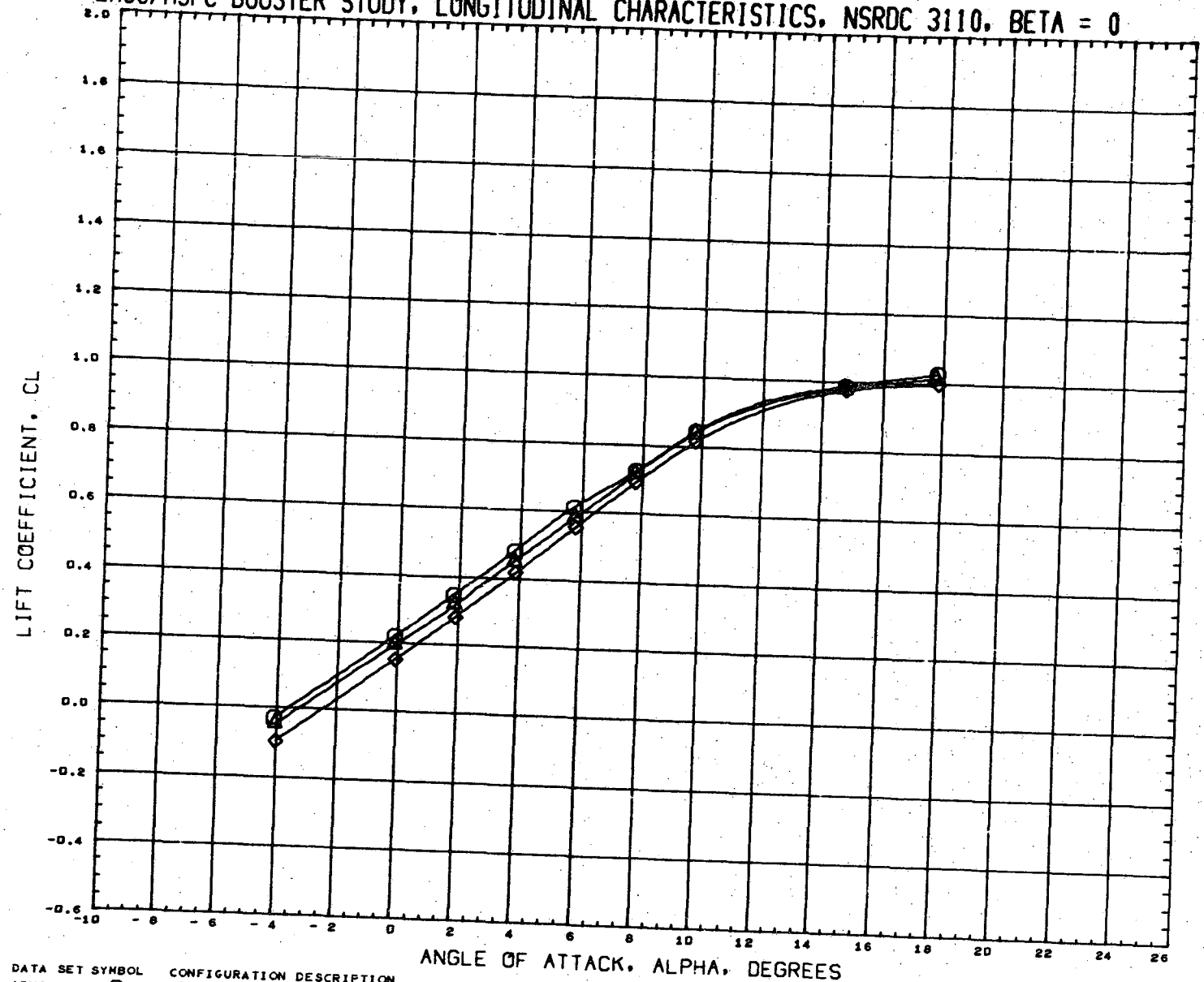


DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2469)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2497)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2501)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

MACH 0.380

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	10.000	0.000	1.000
10.000	10.000	0.000	1.000
20.000	10.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2469)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2497)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2501)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

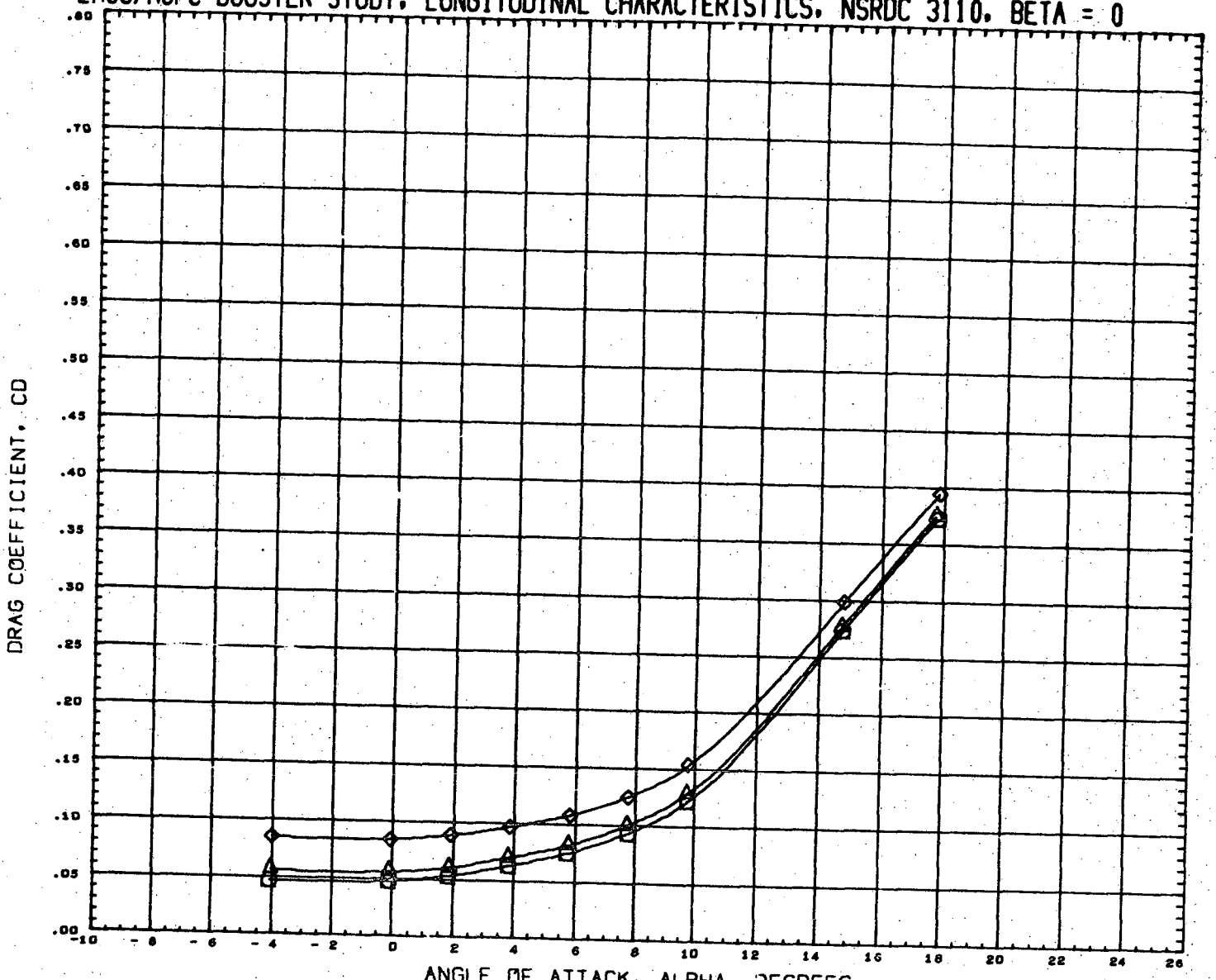
AILRON	ELEVTR	INCIDW	WNGPOS
0.000	10.000	0.000	1.000
10.000	10.000	0.000	1.000
20.000	10.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.380

LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0

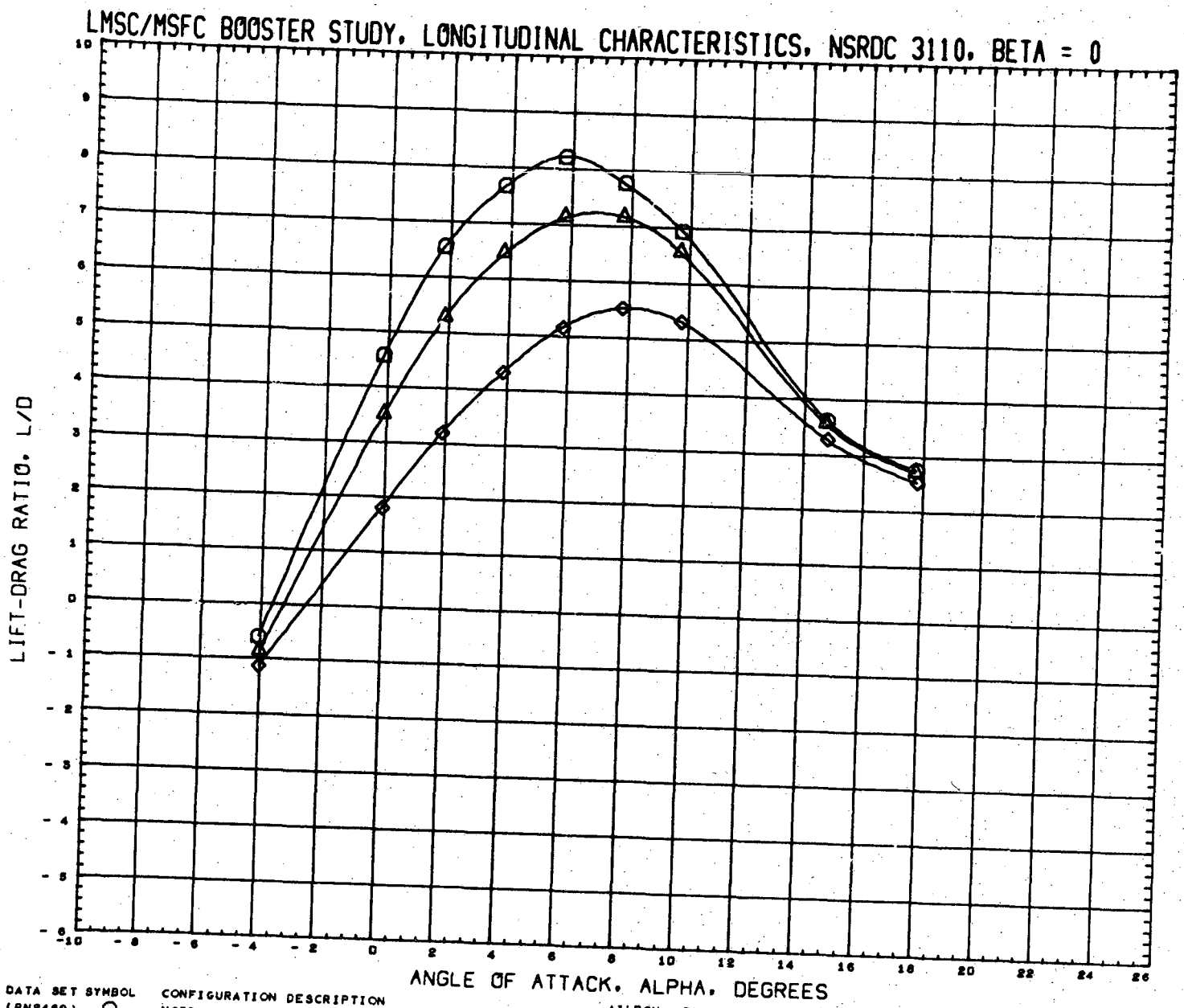


DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2469)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2497)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2501)	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	10.000	0.000	1.000
10.000	10.000	0.000	1.000
20.000	10.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.380


LMSC/MSFC BOOSTER STUDY, LONGITUDINAL CHARACTERISTICS, NSRDC 3110, BETA = 0
LIFT-DRAG RATIO, L/D
ANGLE OF ATTACK, ALPHA, DEGREES

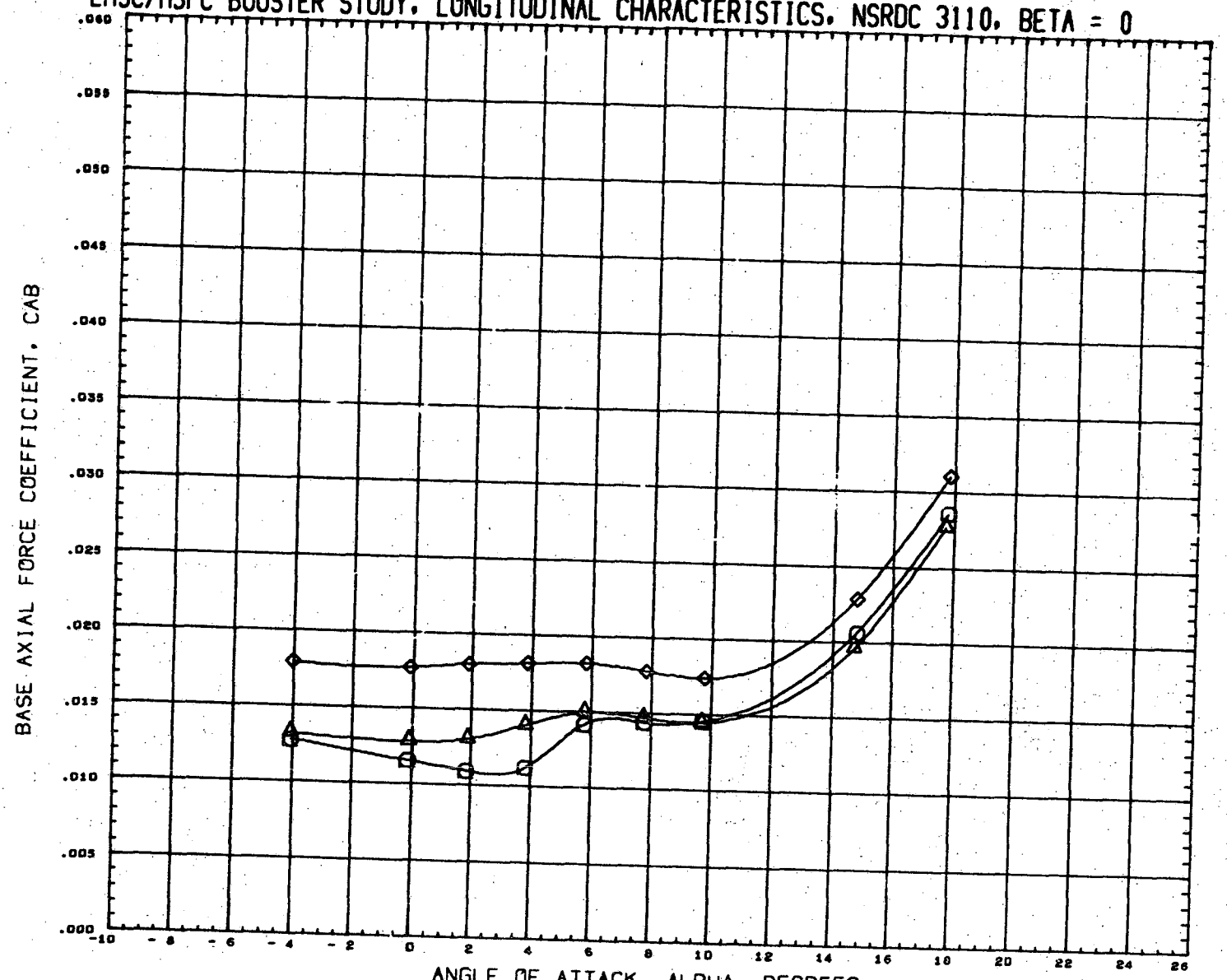
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2469) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2497) △	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2501) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

MACH 0.380

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	10.000	0.000	1.000
10.000	10.000	0.000	1.000
20.000	10.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



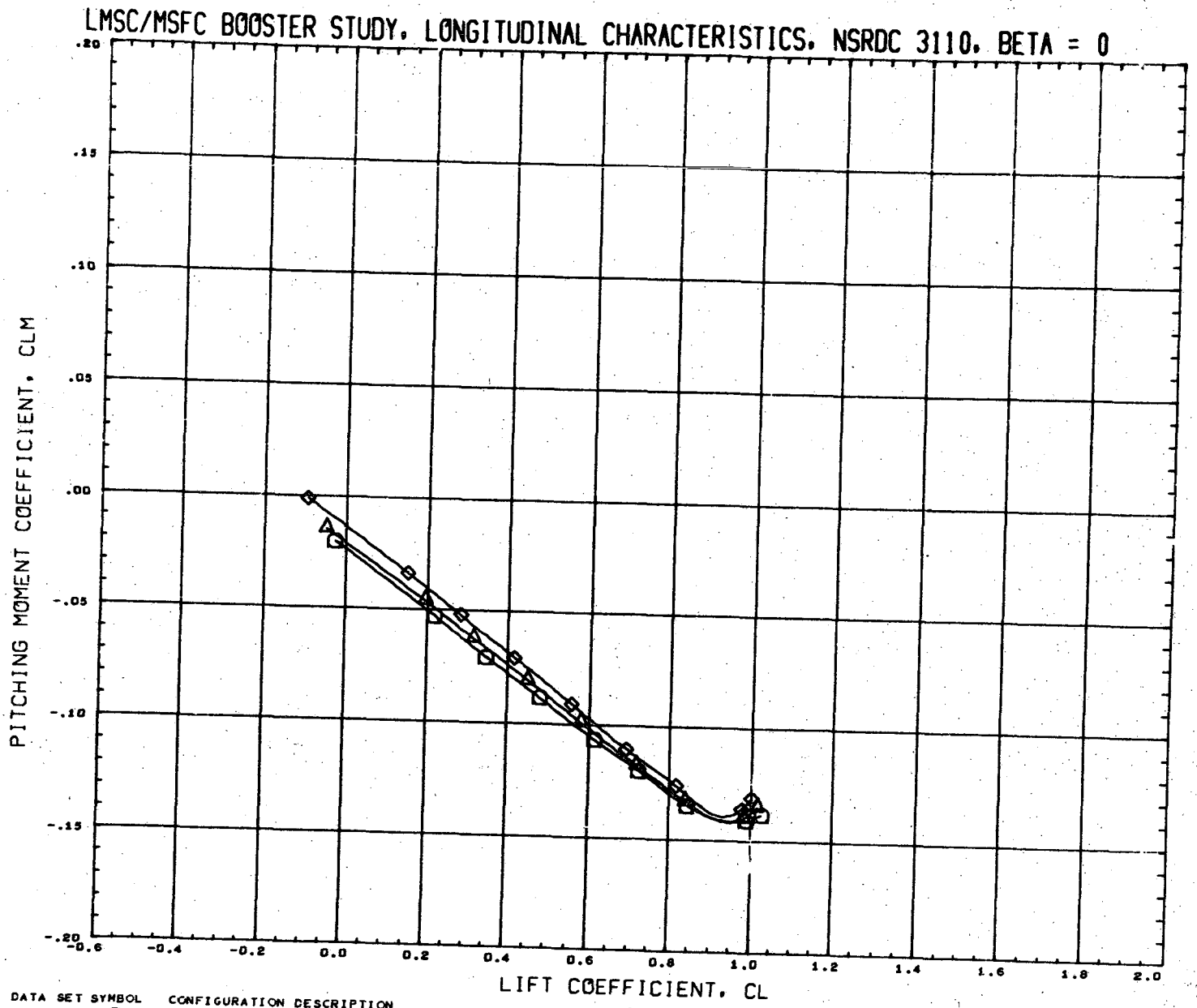
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2469) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2497) △	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2501) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

MACH 0.380

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	10.000	0.000	1.000
10.000	10.000	0.000	1.000
20.000	10.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(RN2469)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2497)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2501)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

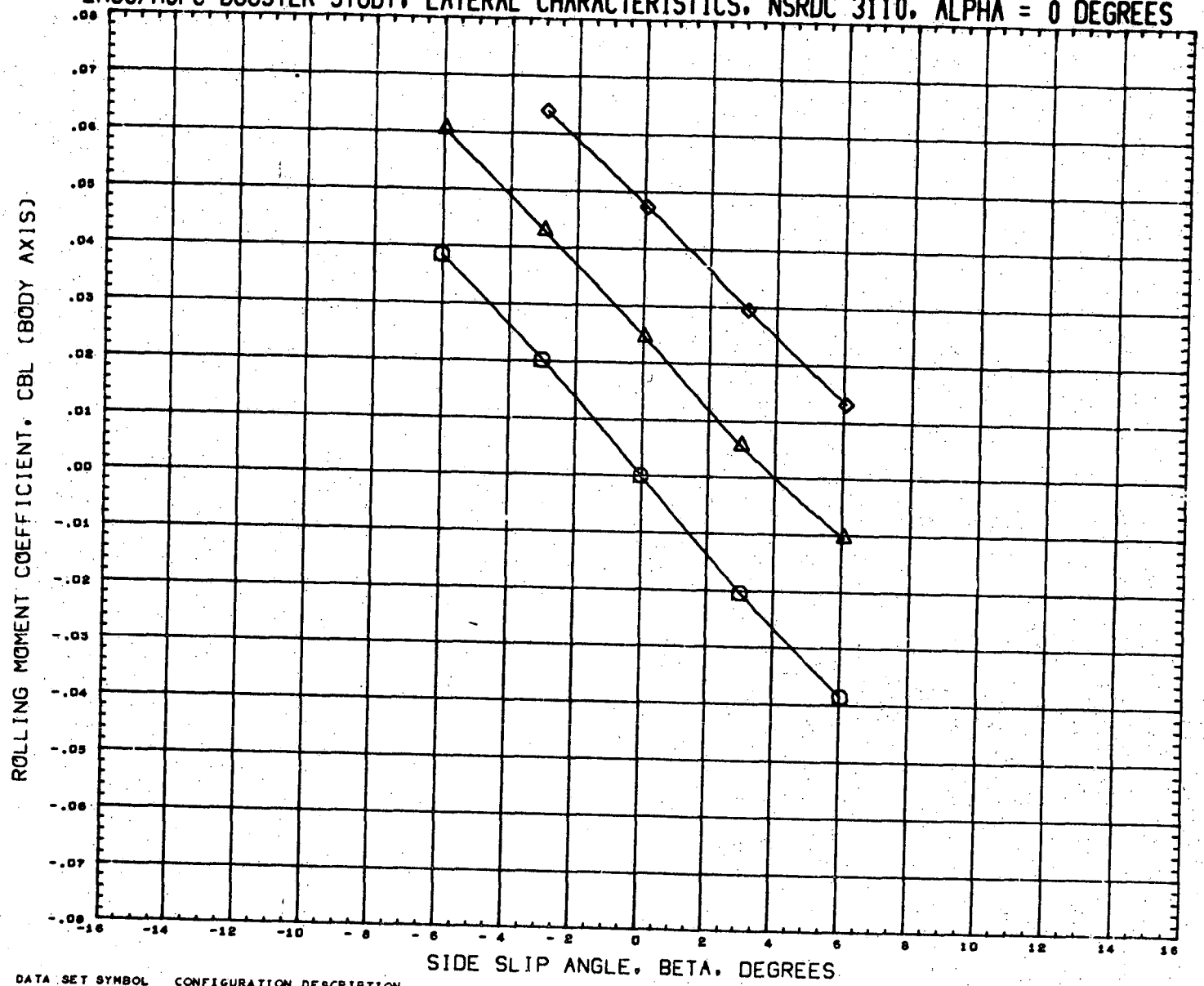
MACH 0.380

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	10.000	0.000	1.000
10.000	10.000	0.000	1.000
20.000	10.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDY, LATERAL CHARACTERISTICS, NSRDC 3110, ALPHA = 0 DEGREES



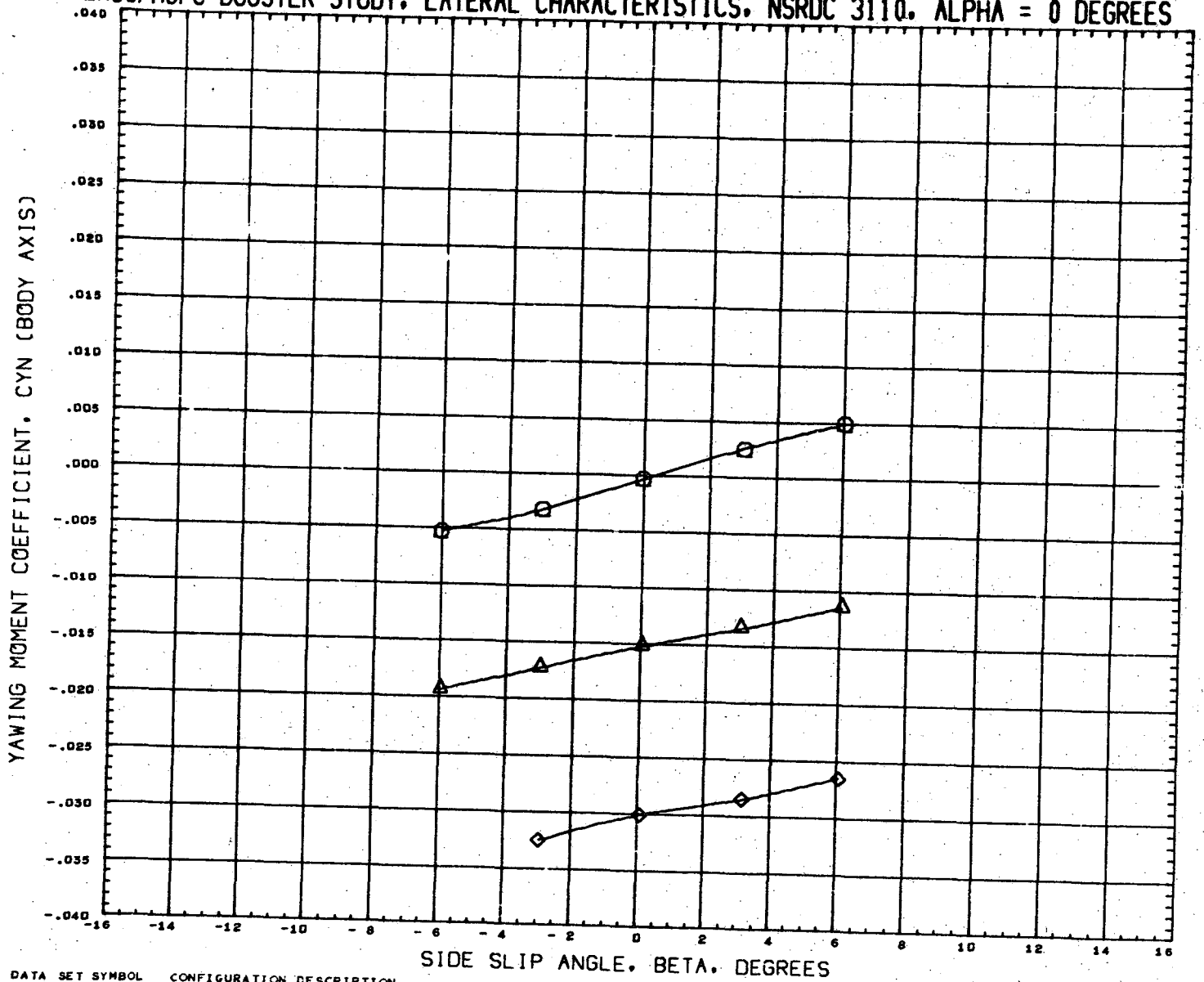
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2470) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2498) △	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2502) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	10.000	0.000	1.000
10.000	10.000	0.000	1.000
20.000	10.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.380

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RN2470) ○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2498) △	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2502) ◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

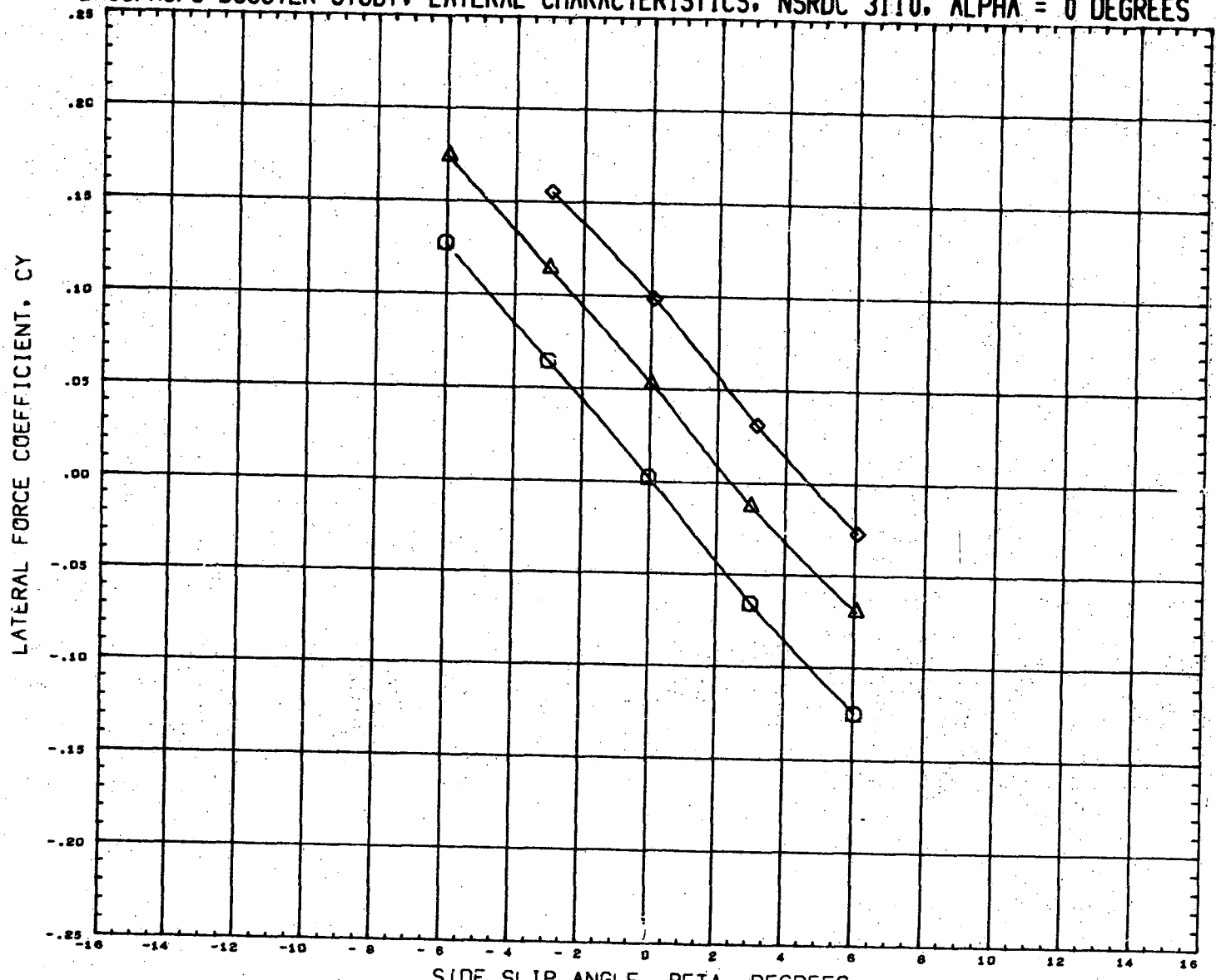
AILRON	ELEVTR	INCIDW	WNGFOS
0.000	10.000	0.000	1.000
10.000	10.000	0.000	1.000
20.000	10.000	0.000	1.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.360

LMSC/MSFC BOOSTER STUDY. LATERAL CHARACTERISTICS. NSRDC 3110. ALPHA = 0 DEGREES



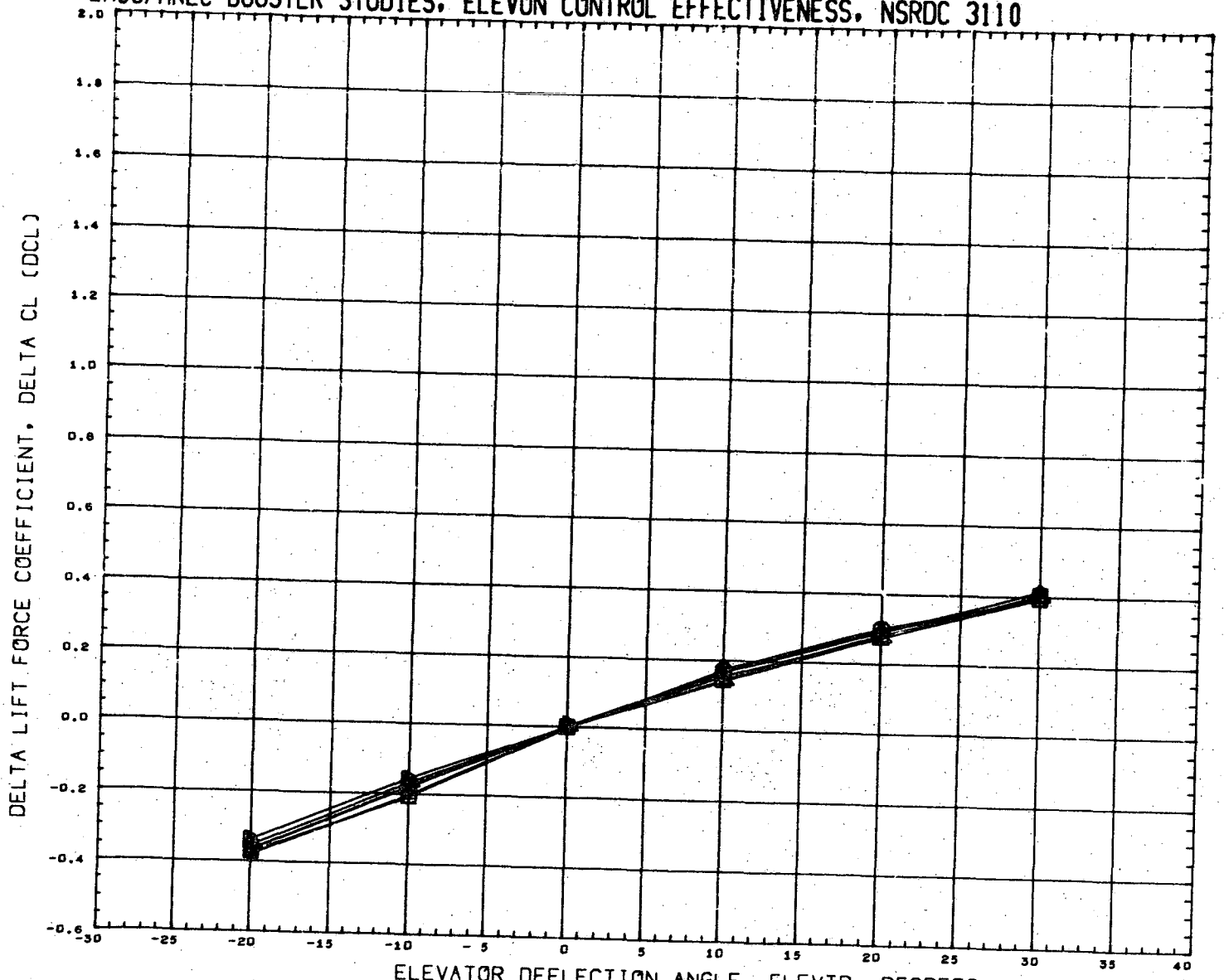
DATA SET SYMBOL		CONFIGURATION DESCRIPTION
(RN2470)	○	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W
(RN2498)	△	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1
(RN2502)	◇	NSRDC-3110,MSFC/LMSC BOOSTER B1V1W1

AILRON	ELEVTR	INCIDW	WNGPOS
0.000	10.000	0.000	1.000
10.000	10.000	0.000	1.000
20.000	10.000	0.000	1.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

MACH 0.360

LMSC/HREC BOOSTER STUDIES, ELEVON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
○	-2.000
△	0.000
◇	4.000
□	6.000
▽	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	INCIDC	3.000		
INCIDW	0.000	DIHDRL	7.660		
AILRON	0.000	CANARD	0.000		
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				
DATA HIST. CODE	I*C				

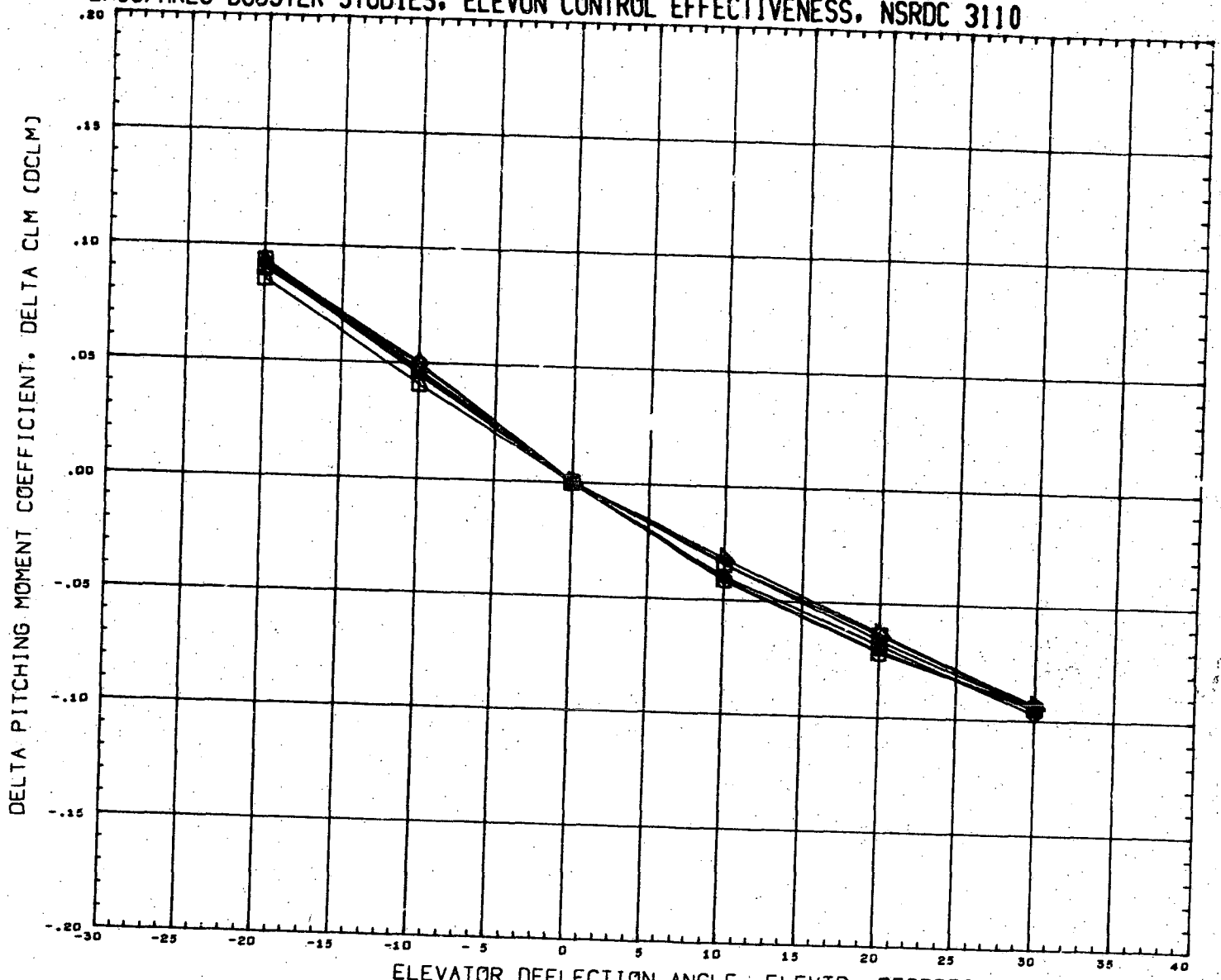
DATA SOURCE

DATASET	ELEVTR	DATASET	ELEVTR
CN2329	-20.000	CN2341	-10.000
CN2001	0.000	CN2353	10.000
CN2365	20.000	CN2377	30.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
☐	0.000
◇	4.000
△	6.000
○	8.000
	10.000

PARAMETRIC VALUES

MACH	0.380	INCIDC	3.000		
INCIDW	0.000	DIHDRL	7.660		
AILRON	0.000	CANARD	0.000		
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				
DATA HIST. CODE	I#C				

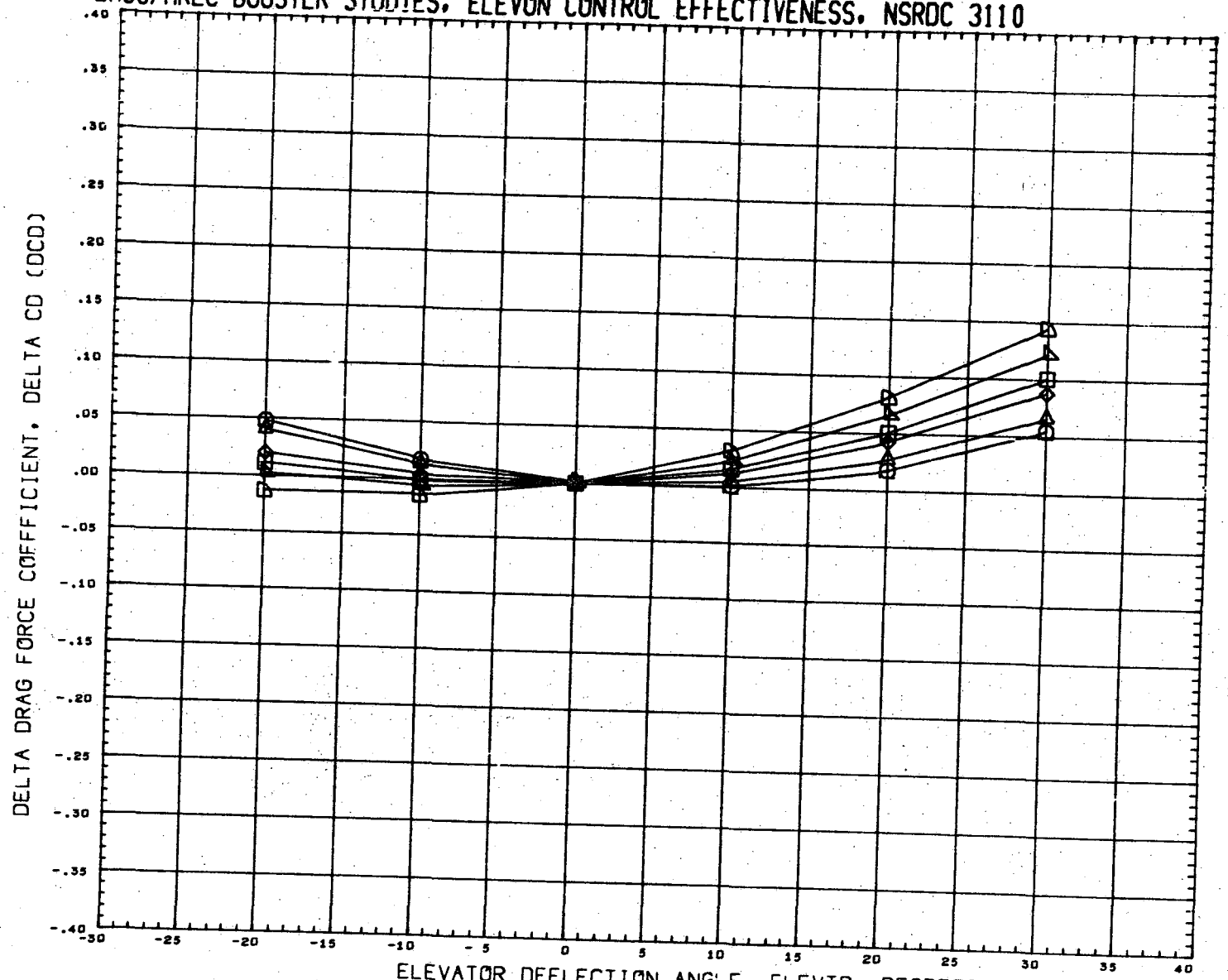
DATA SOURCE

DATASET	ELEVTR	DATASET	ELEVTR
CN2329	-20.000	CN2341	-10.000
CN2001	0.000	CN2353	10.000
CN2365	20.000	CN2377	30.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
○	-2.000
◇	0.000
△	4.000
□	6.000
◇	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	INCIDC	3.000		
INCIDW	0.000	DIHDRL	7.660		
AILRON	0.000	CANARD	0.000		
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				
DATA HIST. CODE	I*C				

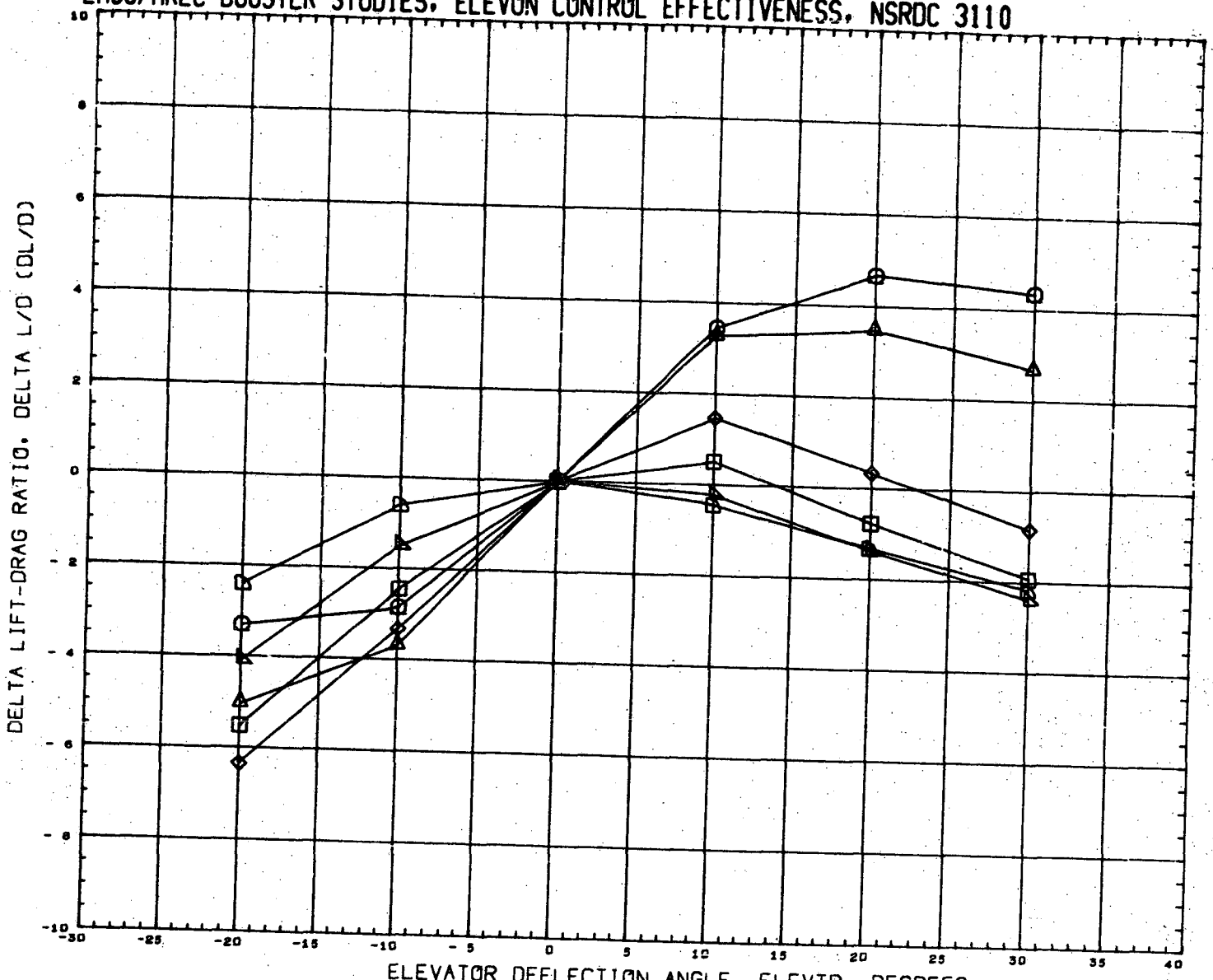
DATA SOURCE

DATASET	ELEVTR	DATASET	ELEVTR
CN2329	-20.000	CN2341	-10.000
CN2001	0.000	CN2353	10.000
CN2365	20.000	CN2377	30.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
○	-2.000
△	0.000
◇	4.000
□	6.000
▽	8.000
▷	10.000

MACH		INCIDC	
INCIDW	0.000	DIHDRL	7.660
AILRON	0.000	CANARD	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		
DATA HIST. CODE	I*C		

PARAMETRIC VALUES: 0.380, 3.000

DATA SOURCE

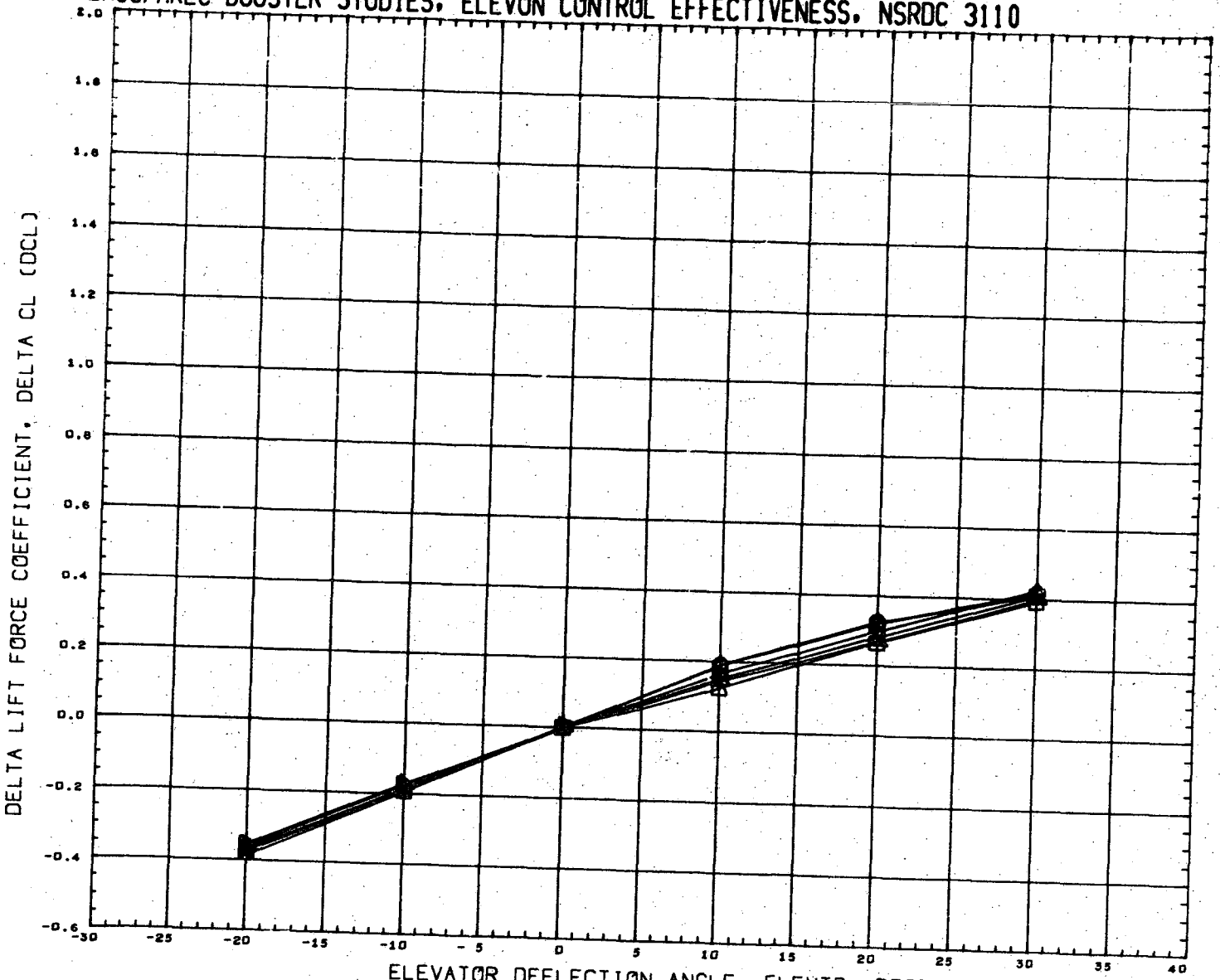
DATASET	ELEVTR	DATASET	ELEVTR
CN2329	-20.000	CN2341	-10.000
CN2001	0.000	CN2353	10.000
CN2365	20.000	CN2377	30.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC 3110 B1C2F2W1V1 329-001 MSFC/LMSC BOOSTER (CN2329) 17 SEP 71 PAGE 2078

LMSC/HREC BOOSTER STUDIES, ELEVON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
○	- 2.000
△	0.000
◇	4.000
□	6.000
▽	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	INCIDC	3.000	
INCIDW	0.000	DIHDRL	7.660	
AILRON	0.000	CANARD	10.000	
RUDDER	0.000	WNGPOS	1.000	
CNDPOS	1.000			
DATA HIST. CODE	I*C			

DATA SOURCE

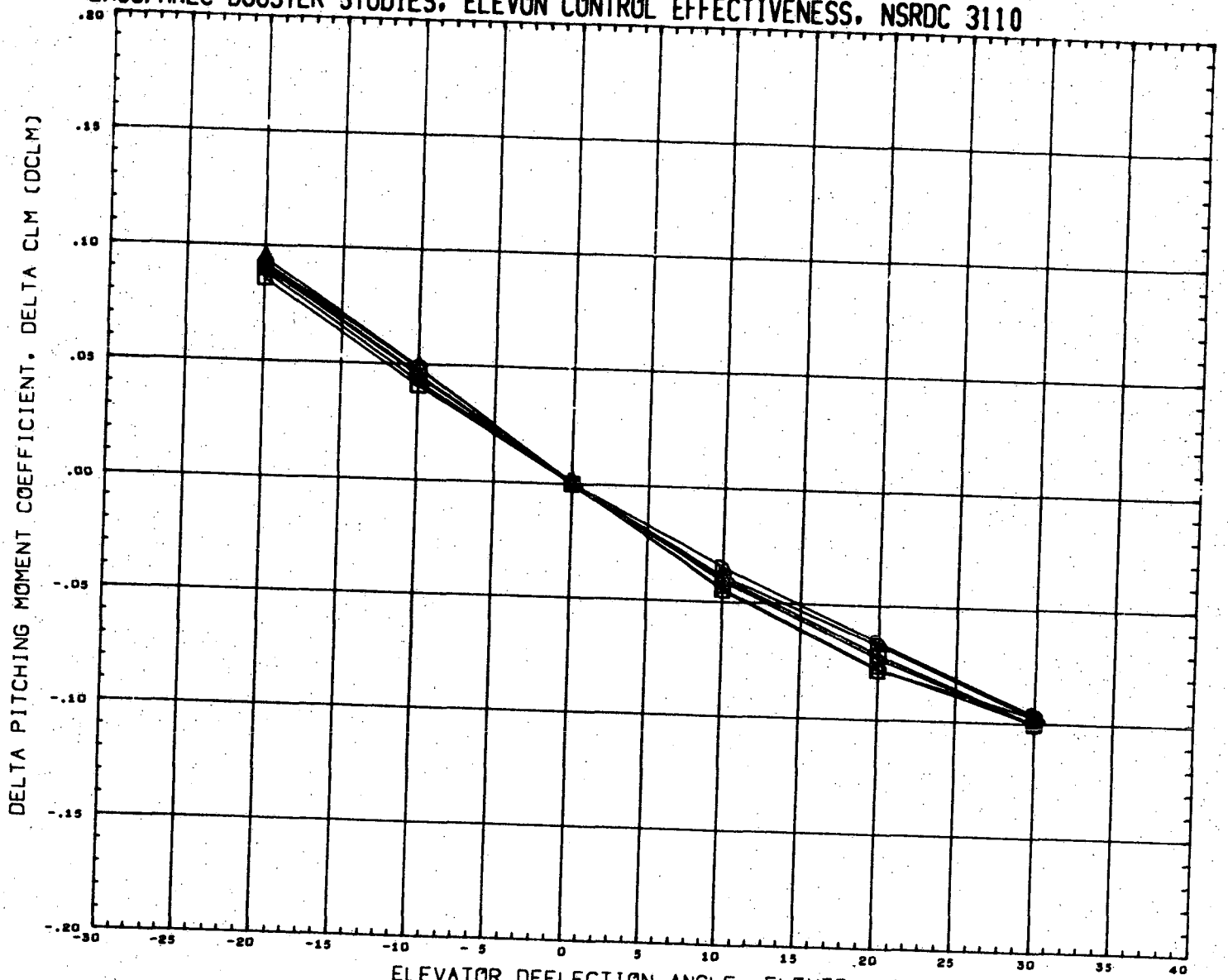
DATASET	ELEVTR	DATASET	ELEVTR
CN2333	- 20.000	CN2345	- 10.000
CN2321	0.000	CN2357	10.000
CN2369	20.000	CN2381	30.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

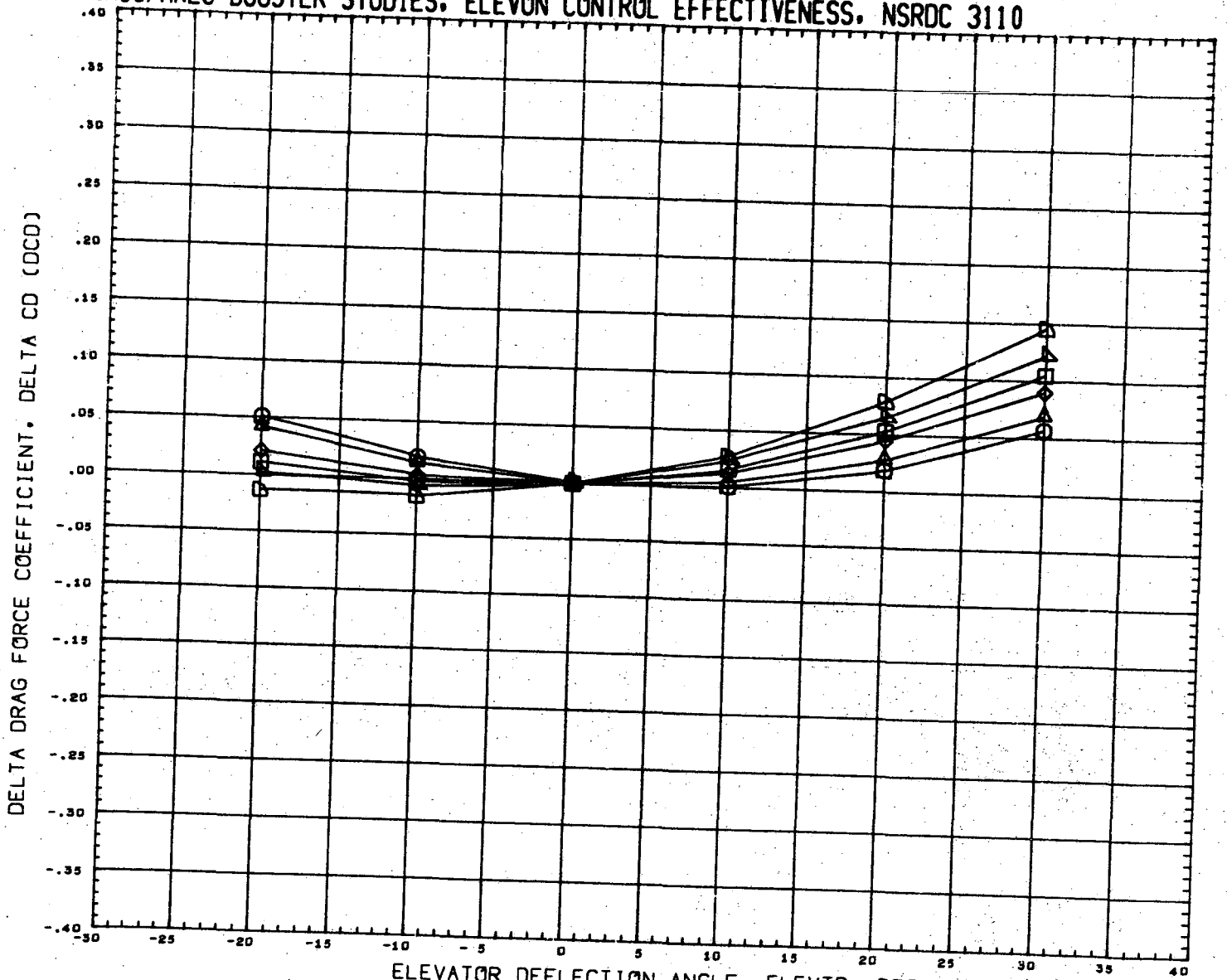
NSRDC 3110 B1C2F2W1V1 333-321 MSFC/LMSC BOOSTER (CN2333) 17 SEP 71 PAGE 2079

LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110

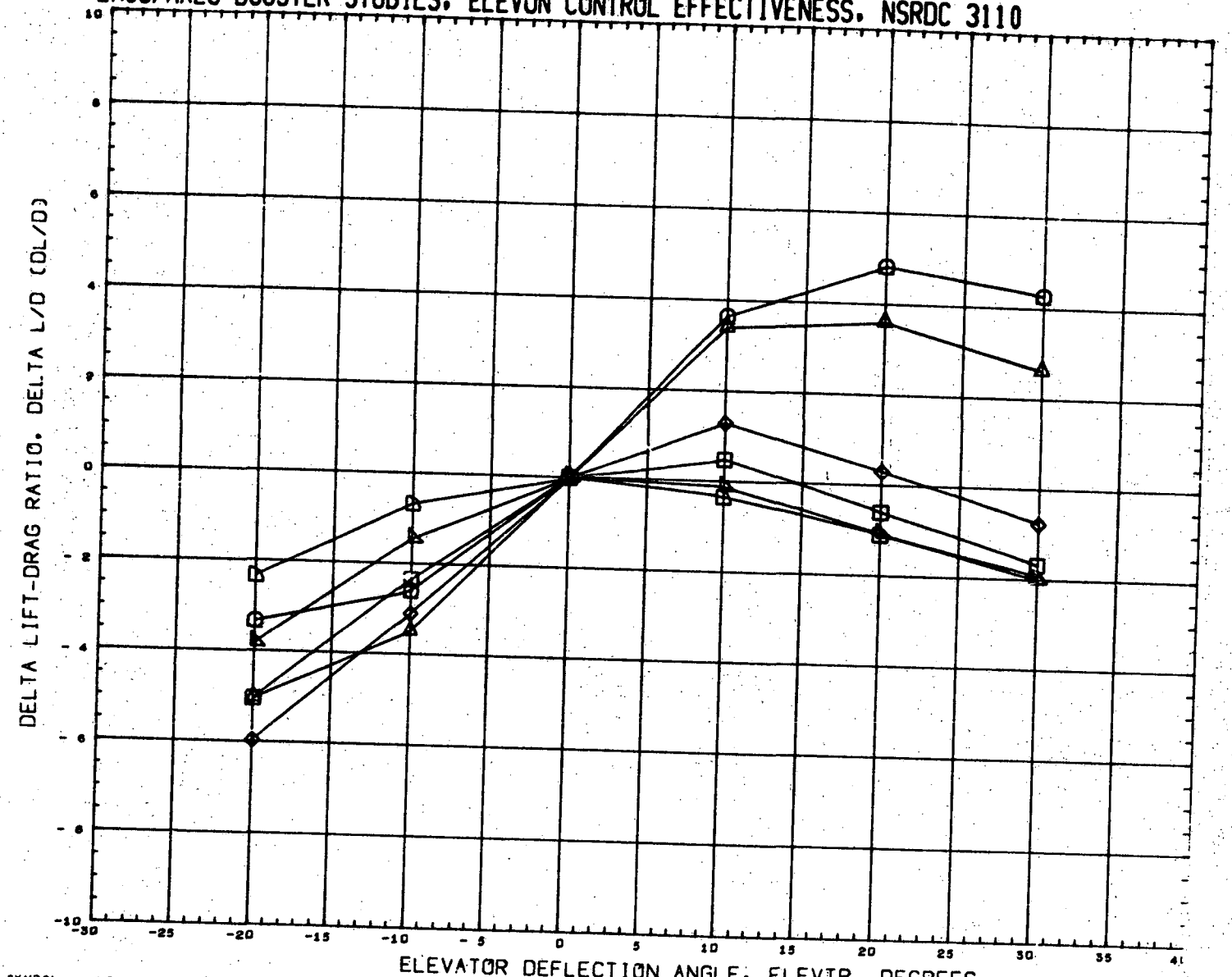


SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
	- 2.000	MACH	0.380	INCIDC	3.000	DATASET	ELEVTR	DATASET	ELEVTR	SREF	1.3550	SQ.FT.
	0.000	INCIDW	0.000	DIHDRL	7.660	CN2333	- 20.000	CN2345	- 10.000	LREF	41.4360	INCHES
	4.000	AILRON	0.000	CANARD	10.000	CN2321	0.000	CN2357	10.000	BREF	41.4360	INCHES
	6.000	RUDDER	0.000	WNGPOS	1.000	CN2369	20.000	CN2381	30.000	XMRP	31.1400	INCHES
	8.000	CNDPOS	1.000							YMRP	0.0000	INCHES
	10.000	DATA HIST. CODE	I*C							ZMRP	0.2250	INCHES
										SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110



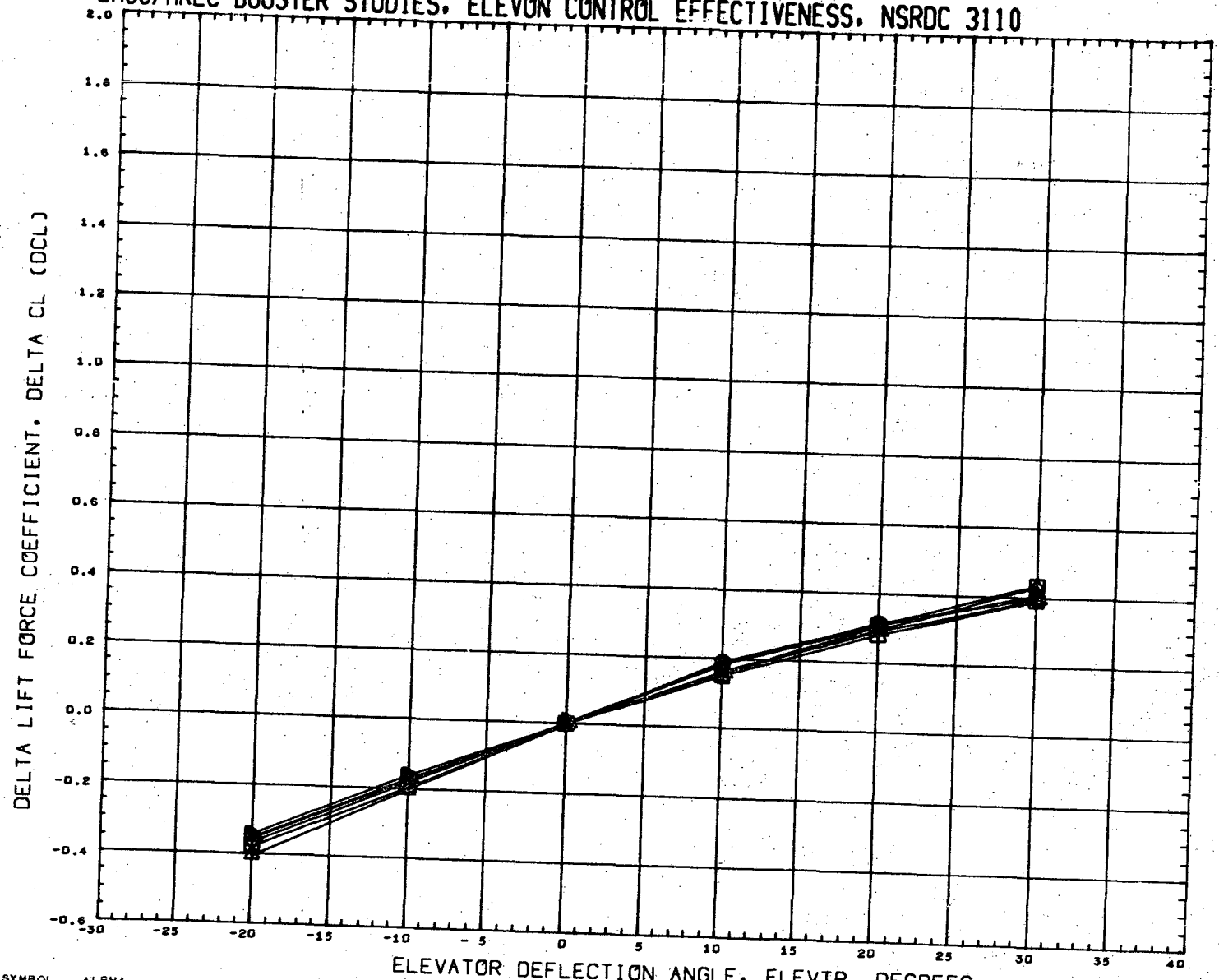
SYMBOL	ALPHA	MACH	PARAMETRIC VALUES				DATA SOURCE				REFERENCE INFORMATION		
	- 2.000	MACH	0.380	INCIDC	3.000	DATASET	ELEVTR	DATASET	ELEVTR	SREF	1.3550	SQ.FT.
	0.000	INCIDW	0.000	DIHDRL	7.660	CN2333	- 20.000	CN2345	- 10.000	LREF	41.4360	INCHES
	4.000	AILRON	0.000	CANARD	10.000	CN2321	0.000	CN2357	10.000	BREF	41.4360	INCHES
	6.000	RUDDER	0.000	WNGPOS	1.000	CN2369	20.000	CN2381	30.000	XMRP	31.1400	INCHES
	8.000	CNDPOS	1.000							YMRP	0.0000	INCHES
	10.000	DATA HIST. CODE	I*C							ZMRP	0.2250	INCHES
										SCALE	1.5000	PERCNT


LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110
DELTA LIFT-DRAG RATIO. DELTA L/D (DL/D)
ELEVATOR DEFLECTION ANGLE. ELEVTR. DEGREES

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
	- 2.000	MACH	0.380	INCIDC	3.000	DATASET	ELEVTR	DATASET	ELEVTR	SREF	1.3550	SQ.FT.
	0.000	INCIDW	0.000	DIHDRL	7.660	CN2333	- 20.000	CN2345	- 10.000	LREF	41.4360	INCHES
	4.000	AILRON	0.000	CANARD	10.000	CN2321	0.000	CN2357	10.000	BREF	41.4360	INCHES
	6.000	RUDDER	0.000	WNGPOS	1.000	CN2369	20.000	CN2381	30.000	XMRP	31.1400	INCHES
	8.000	CNDPOS	1.000							YMRP	0.0000	INCHES
	10.000	DATA HIST. CODE	I*C							ZMRP	0.2250	INCHES
										SCALE	1.5000	PERCNT

NSRDC 3110 B1C2F2W1V1 333-321 MSFC/LMSC BOOSTER (CN2333) 17 SEP 71 PAGE 2082

LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
▽	- 2.000
△	0.000
○	4.000
□	6.000
◇	8.000
D	10.000

MACH	0.380	INCIDC	3.000		
INCIDW	0.000	DIHDRL	7.660		
AILRON	0.000	CANARD	20.000		
RUDDER	0.000	WNGFOS	1.000		
CNDFOS	1.000				
DATA HIST. CODE	I*C				

PARAMETRIC VALUES

DATA SOURCE

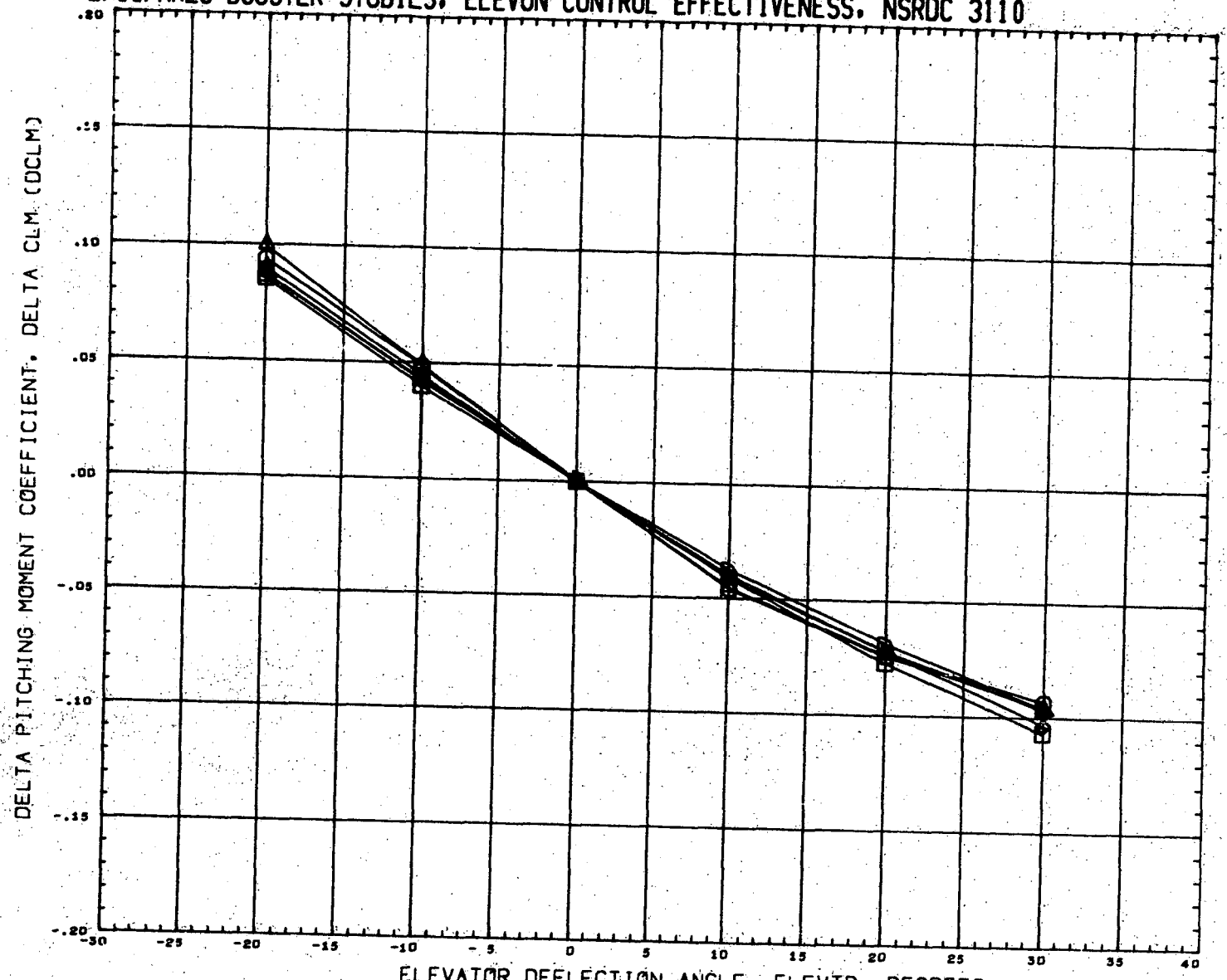
DATASET	ELEVTR	DATASET	ELEVTR
CN2337	- 20.000	CN2349	- 10.000
CN2325	0.000	CN2361	10.000
CN2373	20.000	CN2385	30.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F2W1V1 (CN2337) 17 SEP 71 PAGE 2083

LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
▽	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
D	10.000

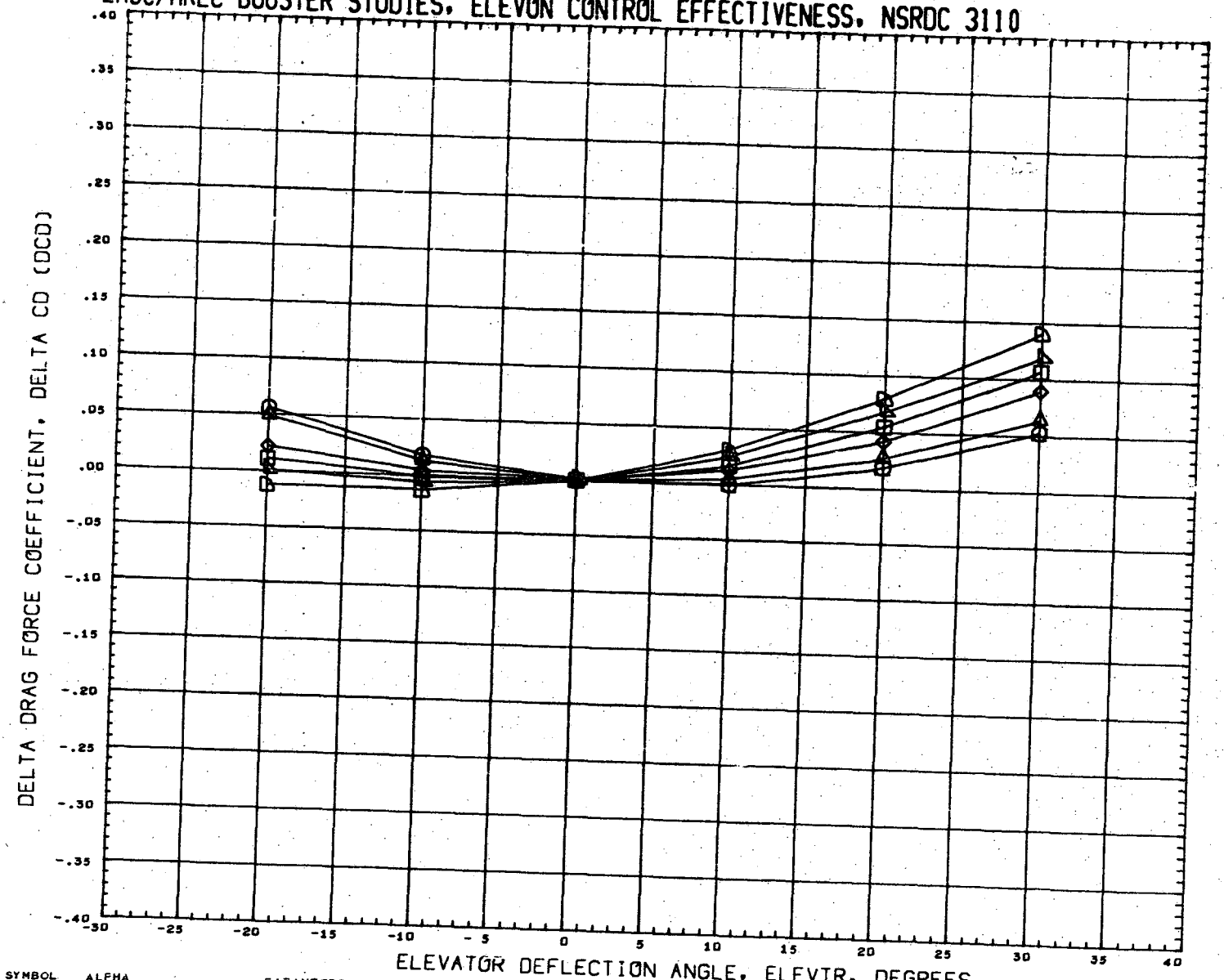
	PARAMETRIC VALUES		
MACH	0.360	INCIDC	3.000
INCIDW	0.000	DIHDRL	7.660
AILRON	0.000	CANARD	20.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		
DATA HIST. CODE	I+C		

DATA SOURCE			
DATASET	ELEVTR	DATASET	ELEVTR
CN2337	-20.000	CN2349	-10.000
CN2325	0.000	CN2361	10.000
CN2373	20.000	CN2385	30.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F2W1V1 (CN2337) 17 SEP 71 PAGE 2084

LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	- 2.000
◇	0.000
◸	4.000
□	6.000
◺	8.000
○	10.000

MACH	0.380	INCIDC	3.000		
INCIDW	0.000	DIHDRL	7.660		
AILRON	0.000	CANARD	20.000		
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				
DATA HIST. CODE	I#C				

PARAMETRIC VALUES

DATA SOURCE

DATASET	ELEVTR
CN2337	- 20.000
CN2325	0.000
CN2373	20.000
CN2349	- 10.000
CN2361	10.000
CN2385	30.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F2W1V1 (CN2337) 17 SEP 71 PAGE 2085

LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110

SYMBOL	ALPHA
D	-2.000
∅	0.000
□	4.000
◇	6.000
△	8.000
⌀	10.000

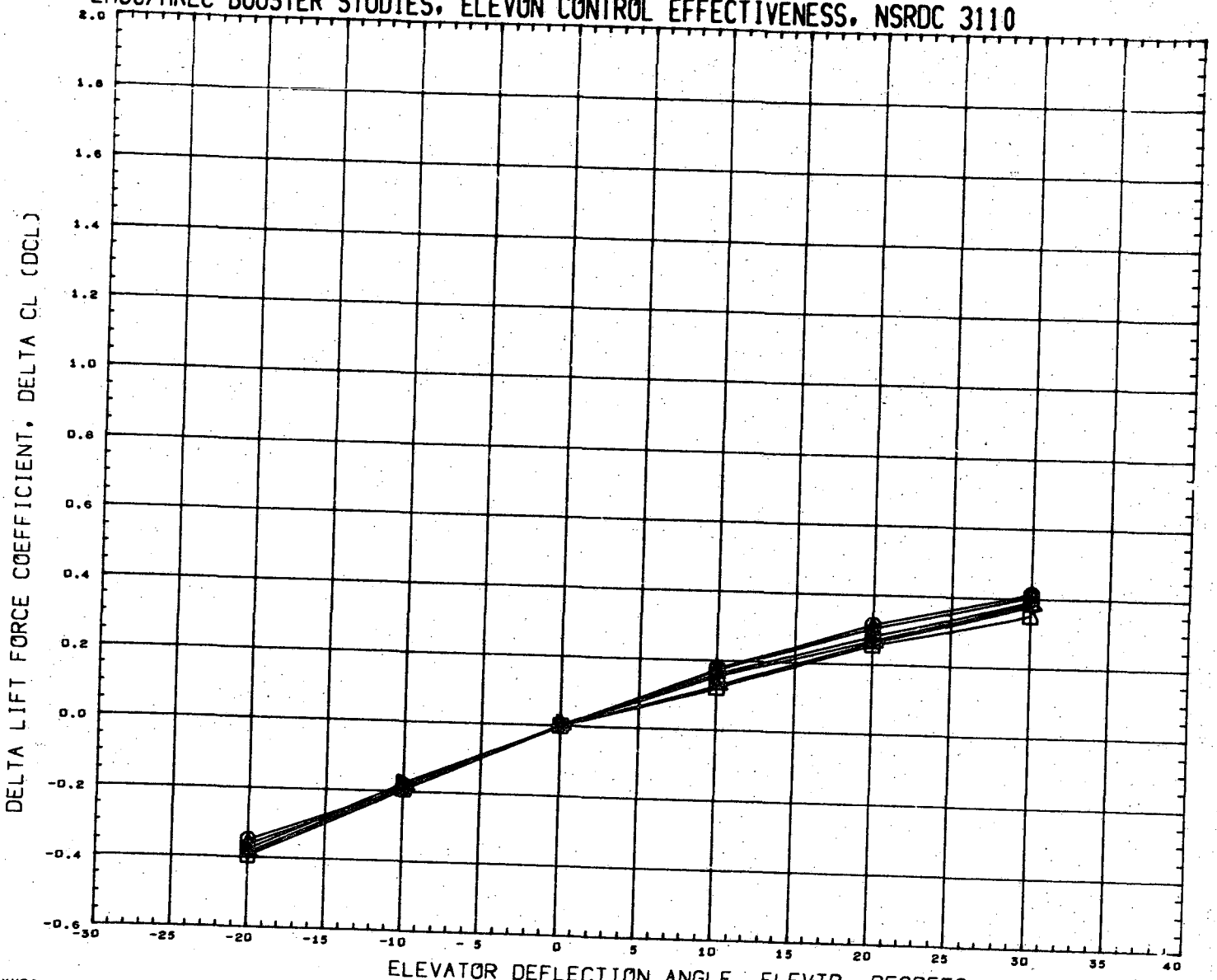
MACH	PARAMETRIC VALUES	INCIDC	3.000
INCIDW	0.360	DIHDRL	7.660
AILRON	0.000	CANARD	20.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	0.000		
DATA HIST. CODE	1.000		
	I*C		

DATA SOURCE			
DATASET	ELEVTR	DATASET	ELEVTR
CN2337	-20.000	CN2349	-10.000
CN2325	0.000	CN2361	10.000
CN2373	20.000	CN2385	30.000

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC. BOOSTER B1C2F2W1V1 (CN2337) 17 SEP 71

LMSC/HREC BOOSTER STUDIES, ELEVON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	- 2.000
◩	0.000
□	4.000
◇	6.000
▷	8.000
▷	10.000

MACH	0.380	INCIDW	0.000		
DIHDRL	7.660	AILRON	0.000		
RUDDER	0.000	WNGPOS	1.000		
DATA HIST. CODE	I*C				

PARAMETRIC VALUES

DATA SOURCE

DATASET	ELEVTR
CN2457	- 20.000
CN2465	0.000
CN2473	20.000

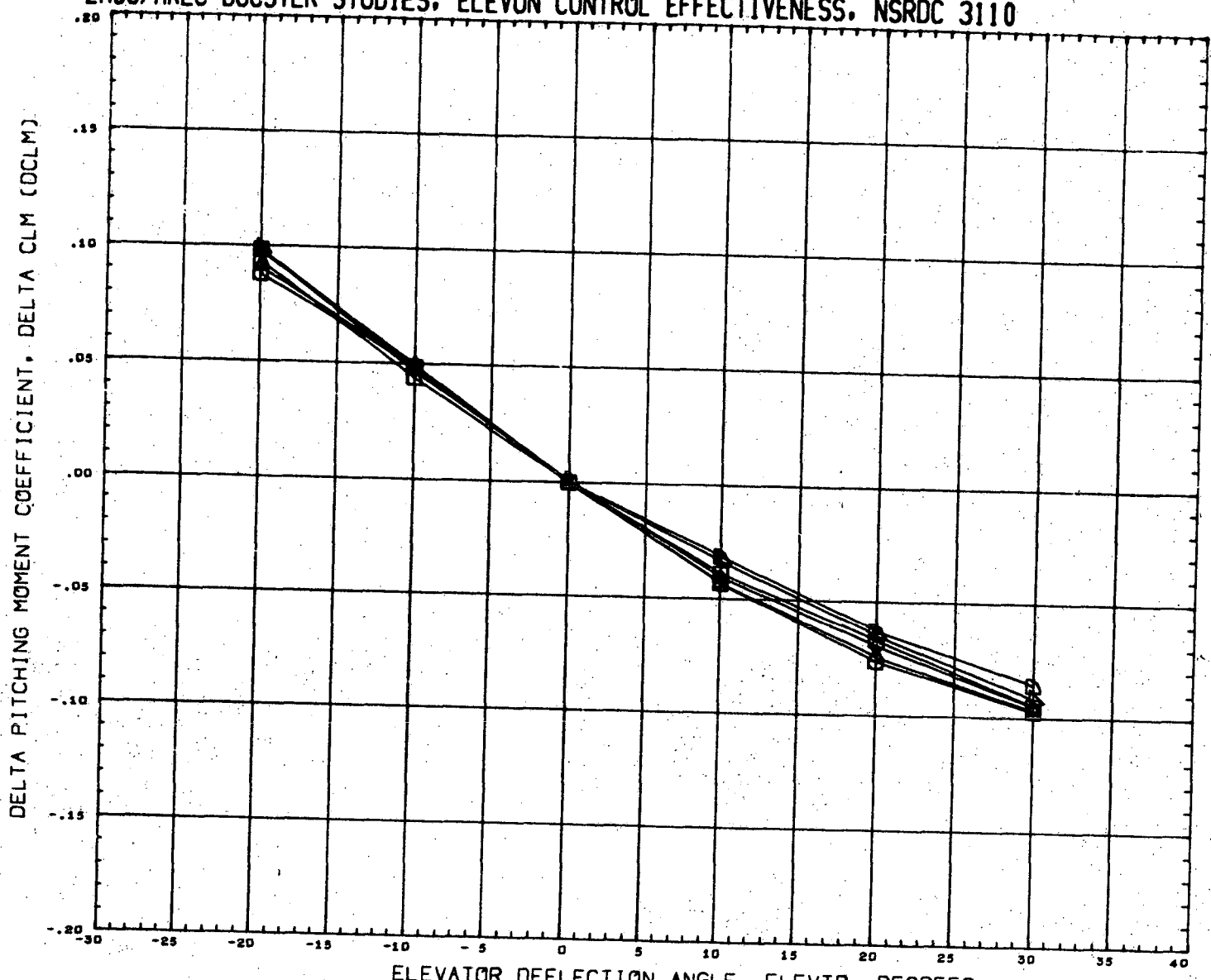
DATASET	ELEVTR
CN2461	10.000
CN2469	10.000
CN2477	30.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1V1W1 (CN2457) 17 SEP 71 PAGE 2087

LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	INCIDW	0.000	
DIHDRL	7.660	AILRON	0.000	
RUDDER	0.000	WNGPOS	1.000	

DATA HIST. CODE I*C

DATA SOURCE

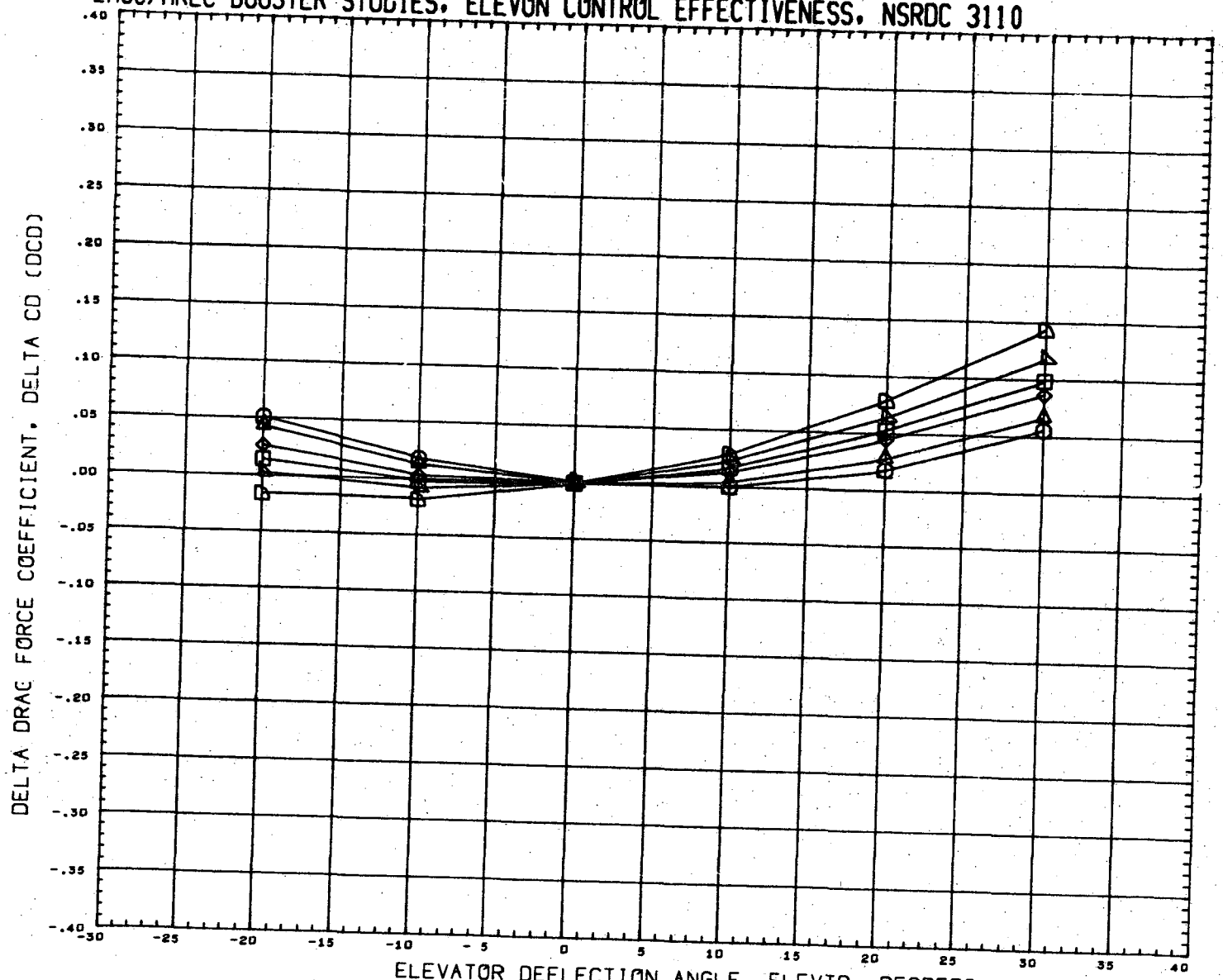
DATASET	ELEVTR	DATASET	ELEVTR
CN2457	-20.000	CN2461	-10.000
CN2465	0.000	CN2469	10.000
CN2473	20.000	CN2477	30.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1V1W1 (CN2457) 17 SEP 71 PAGE 2088

LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	- 2.000
◩	0.000
□	4.000
◇	6.000
△	8.000
D	10.000

DATA HIST. CODE I*C

PARAMETRIC VALUES

MACH	0.380	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
RUDDER	0.000	WNGPOS	1.000

DATA SOURCE

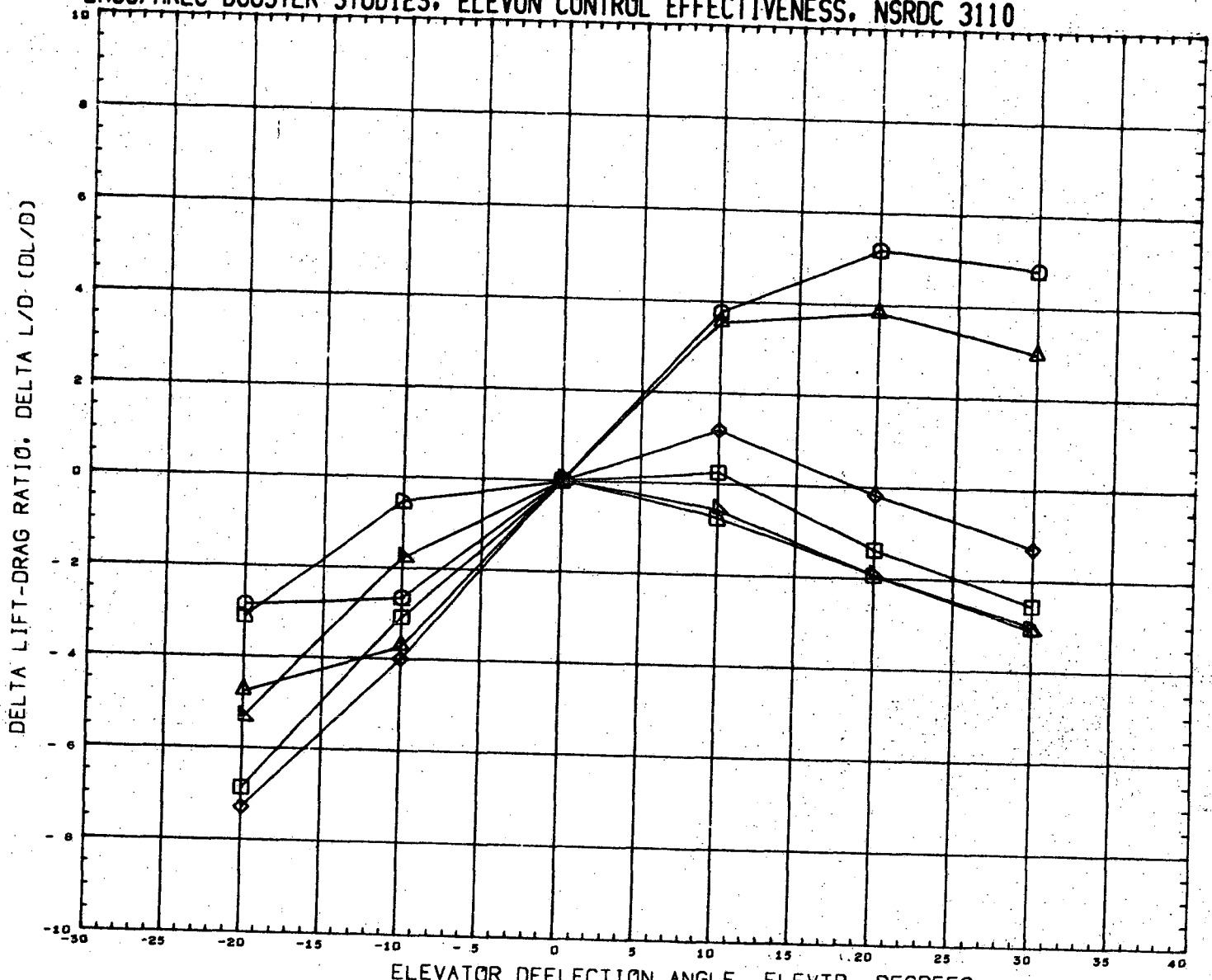
DATASET	ELEVTR	DATASET	ELEVTR
CN2457	- 20.000	CN2461	- 10.000
CN2465	0.000	CN2469	10.000
CN2473	20.000	CN2477	30.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110. MSFC/LMSC BOOSTER B1V1W1 (CN2457) 17 SEP 71 PAGE 2089

LMSC/HREC BOOSTER STUDIES. ELEVON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
○	- 2.000
□	0.000
◇	4.000
△	6.000
▽	8.000
⬡	10.000

PARAMETRIC VALUES

MACH	0.380	INCIDW	0.000		
DIHDRL	7.660	AILRON	0.000		
RUDDER	0.000	WNGPOS	1.000		
DATA HIST. CODE	I*C				

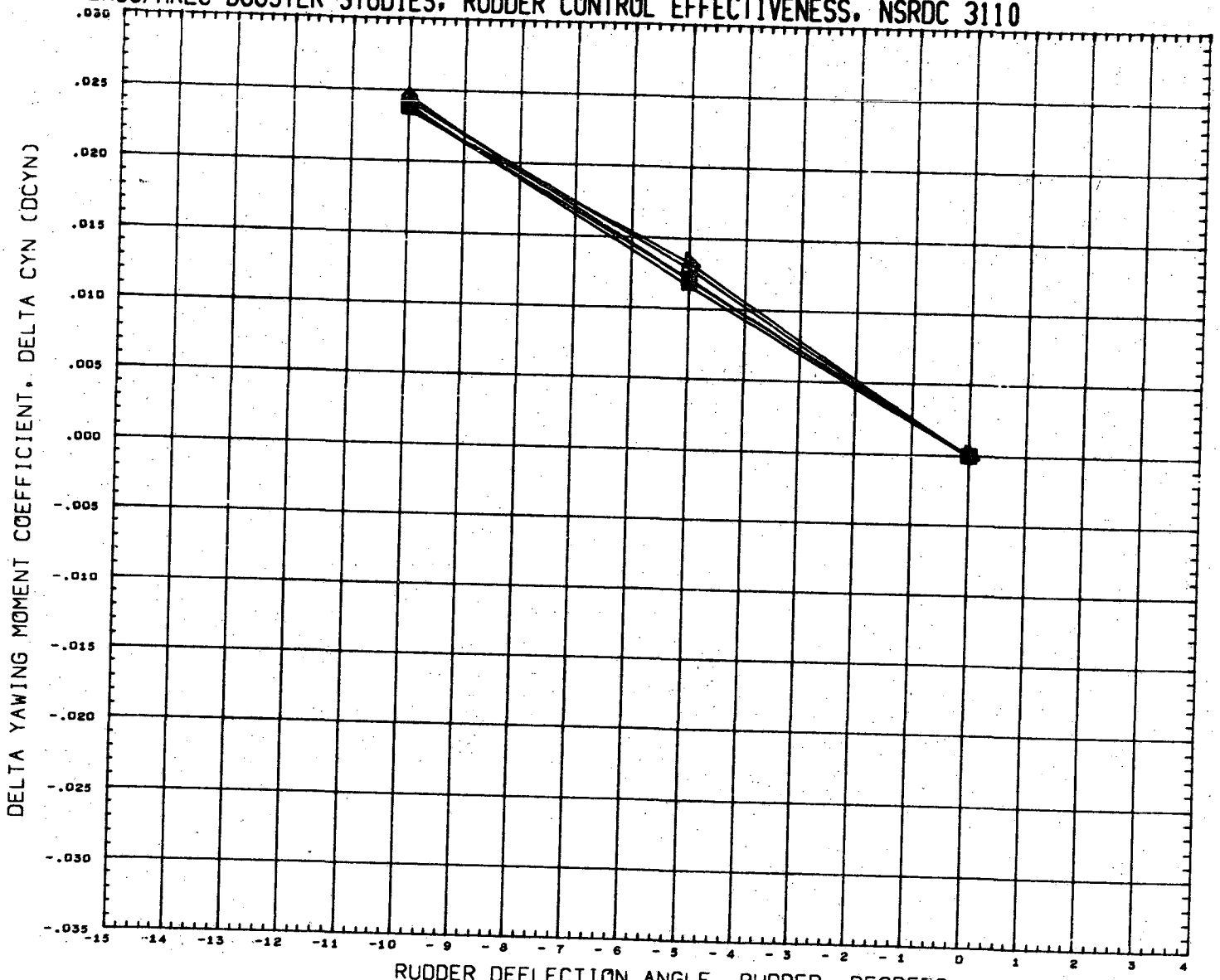
DATA SOURCE

DATASET	ELEVTR	DATASET	ELEVTR
CN2457	- 20.000	CN2461	- 10.000
CN2465	0.000	CN2469	10.000
CN2473	20.000	CN2477	30.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, RUDDER CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	BETA
▽	- 6.000
△	- 3.000
◇	0.000
□	3.000
◸	6.000

PARAMETRIC VALUES

MACH	0.380	ALPHA	0.033	
INCIDC	3.000	INCIDW	0.000	
DIHDRL	7.660	AILRON	0.000	
CANARD	0.000	ELEVTR	0.000	
WNGPOS	1.000	CNDFOS	1.000	

DATA HIST. CODE I*C

DATA SOURCE

DATASET	RUDDER
CN2002	0.000
CN2514	- 10.000

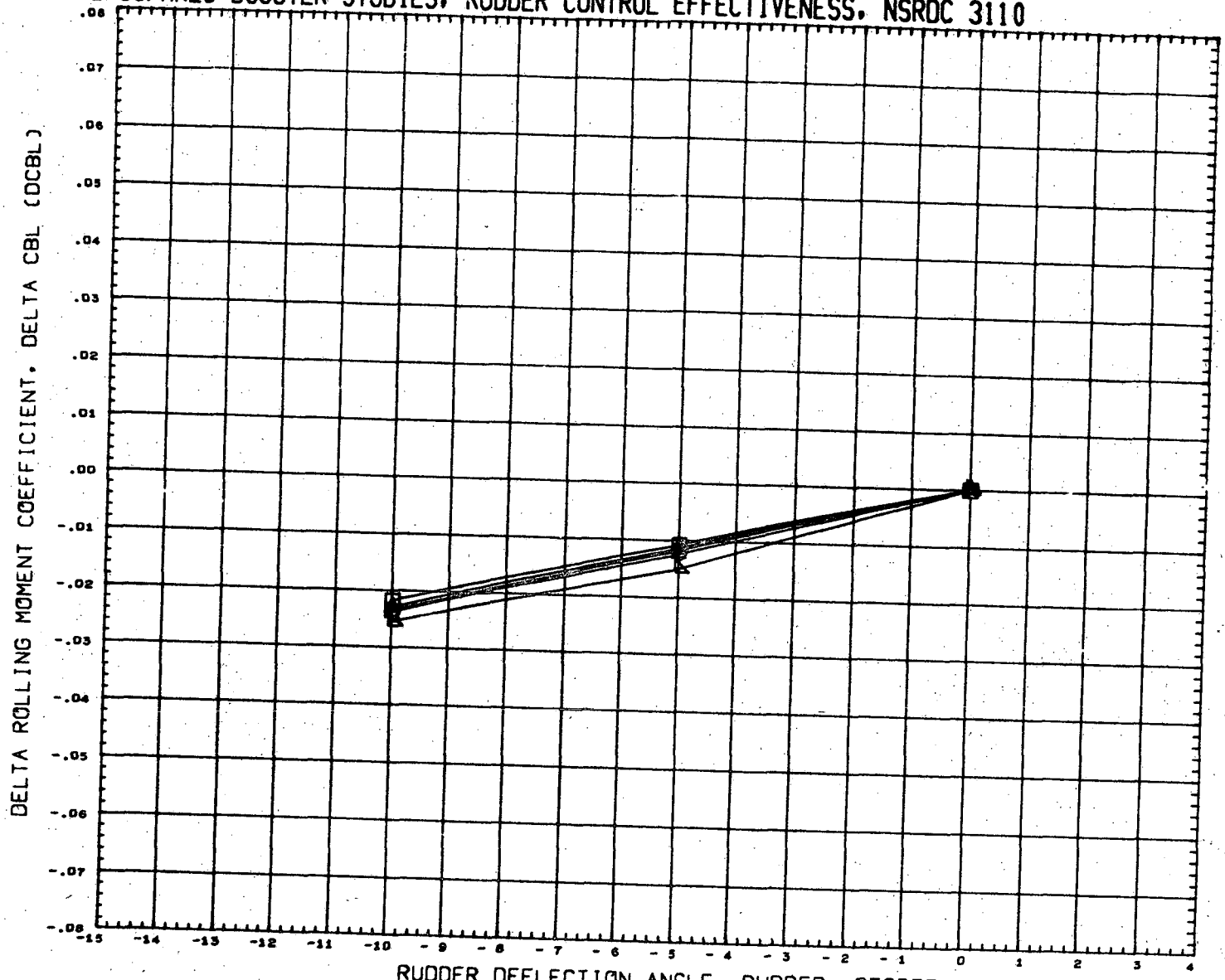
DATASET	RUDDER
CN2511	- 5.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F1W1V1 (CN2002) 17 SEP 71 PAGE 2091

LMSC/HREC BOOSTER STUDIES, RUDDER CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL BETA

- ☐ - 6.000
- ◇ - 3.000
- △ 0.000
- ○ 3.000
- 6.000

PARAMETRIC VALUES

MACH	0.300	ALPHA	0.033
INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
WNGPOS	1.000	CNDFOS	1.000

DATA HIST. CODE I*C

DATA SOURCE

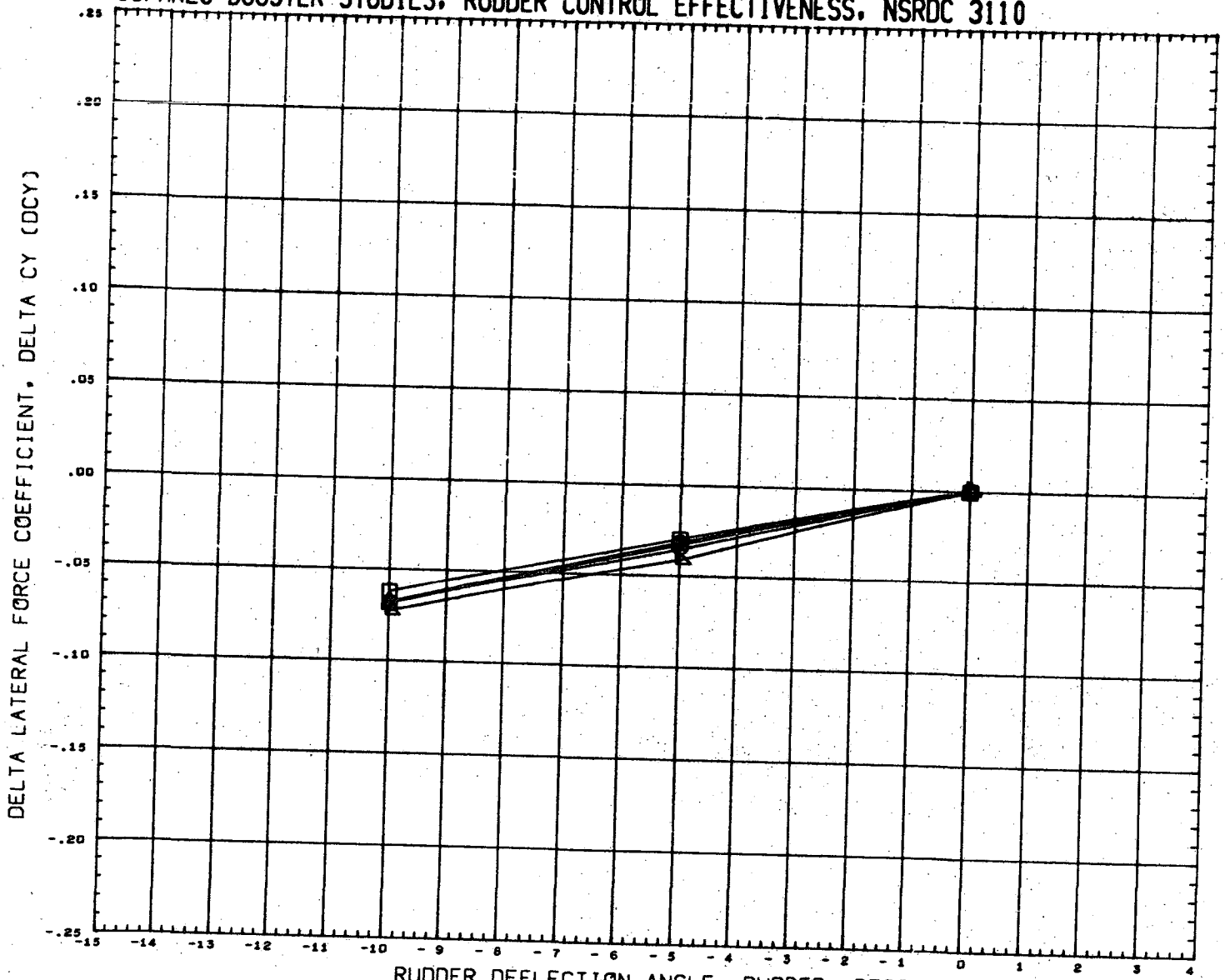
DATASET	RUDDER
CN2002	0.000
CN2514	- 10.000

DATASET	RUDDER
CN2511	- 5.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, RUDDER CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	BETA
▽	- 6.000
△	- 3.000
◇	0.000
▷	3.000
◁	6.000

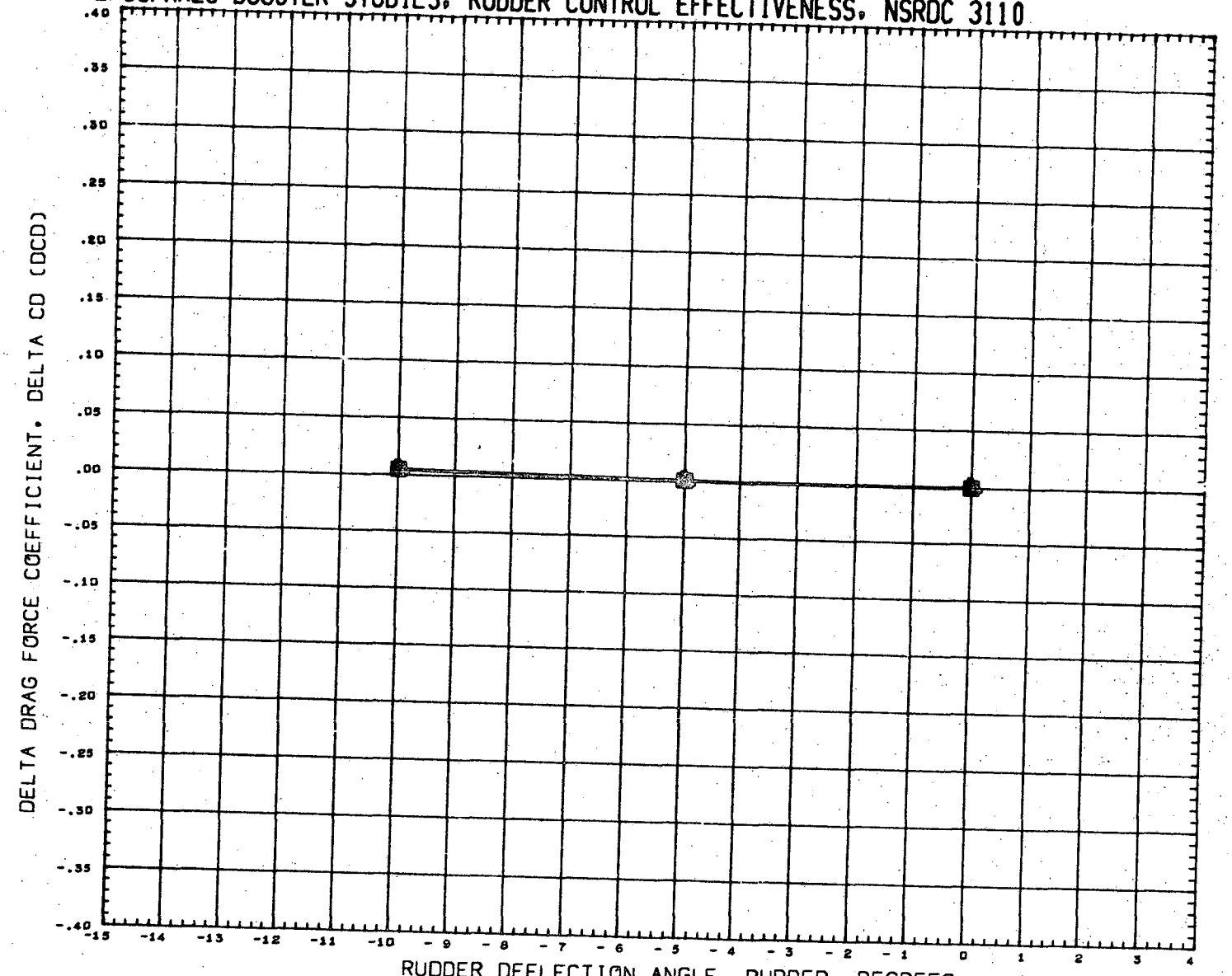
	PARAMETRIC VALUES				
MACH	0.360	ALPHA	0.033		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	AILRON	0.000		
CANARD	0.000	ELEVTR	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE		I#C			

DATA SOURCE			
DATASET	RUDDER	DATASET	RUDDER
CN2002	0.000	CN2511	- 5.000
CN2514	- 10.000		

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F1W1V1 (CN2002) 17 SEP 71 PAGE 2093

LMSC/HREC BOOSTER STUDIES, RUDDER CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	BETA
□	- 6.000
◇	- 3.000
○	0.000
△	3.000
▽	6.000

PARAMETRIC VALUES

MACH	0.380	ALPHA	0.033
INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
WNGPOS	1.000	CNDPOS	1.000

DATA HIST. CODE I#C

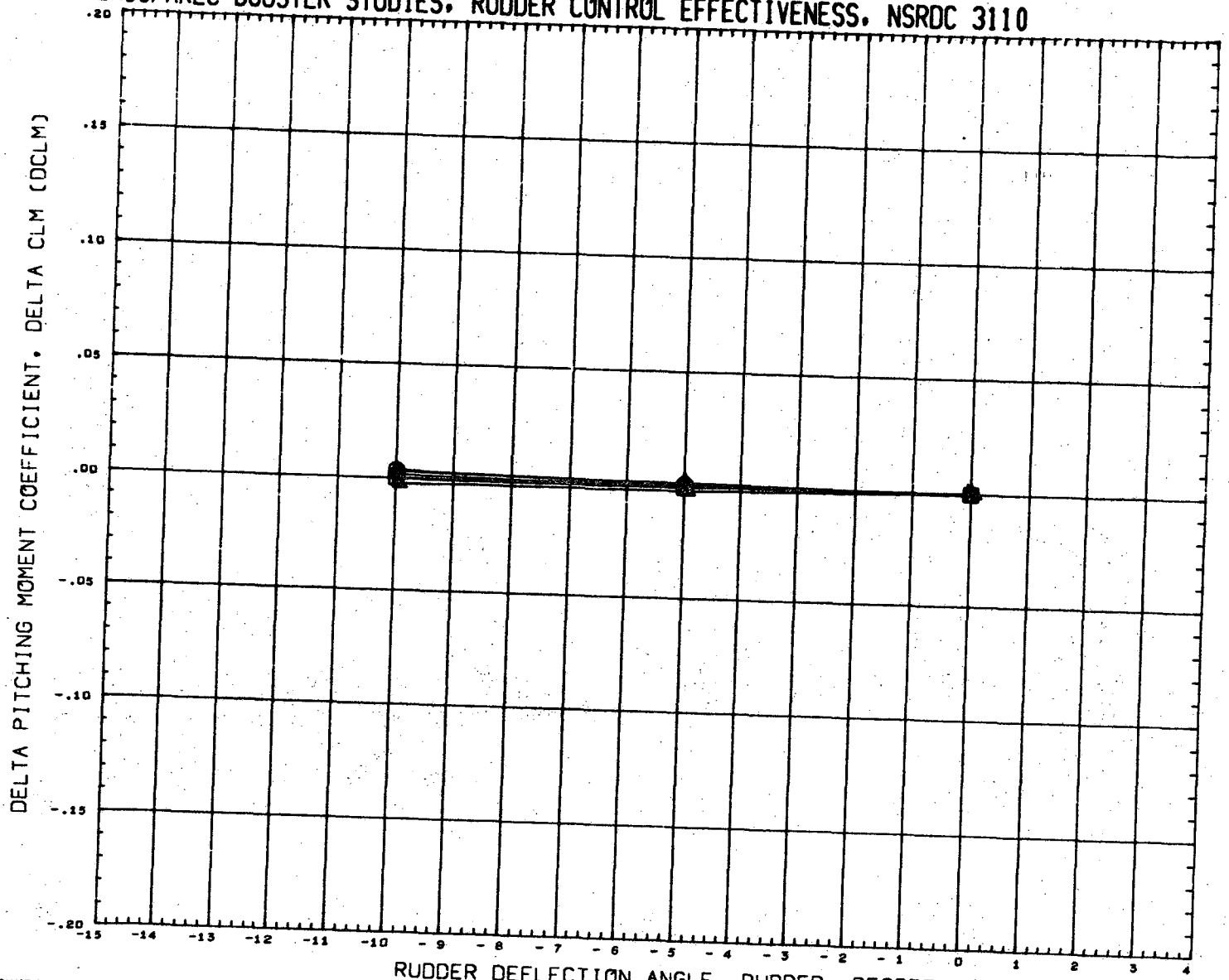
DATA SOURCE

DATASET	RUDDER
CN2002	0.000
CN2514	- 10.000
CN2511	- 5.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. RUDDER CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	BETA
○	- 6.000
△	- 3.000
◇	0.000
□	3.000
▽	6.000

	PARAMETRIC VALUES		
MACH	0.380	ALPHA	0.033
INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
WNGPOS	1.000	CNDPOS	1.000
DATA HIST. CODE	I*C		

DATA SOURCE

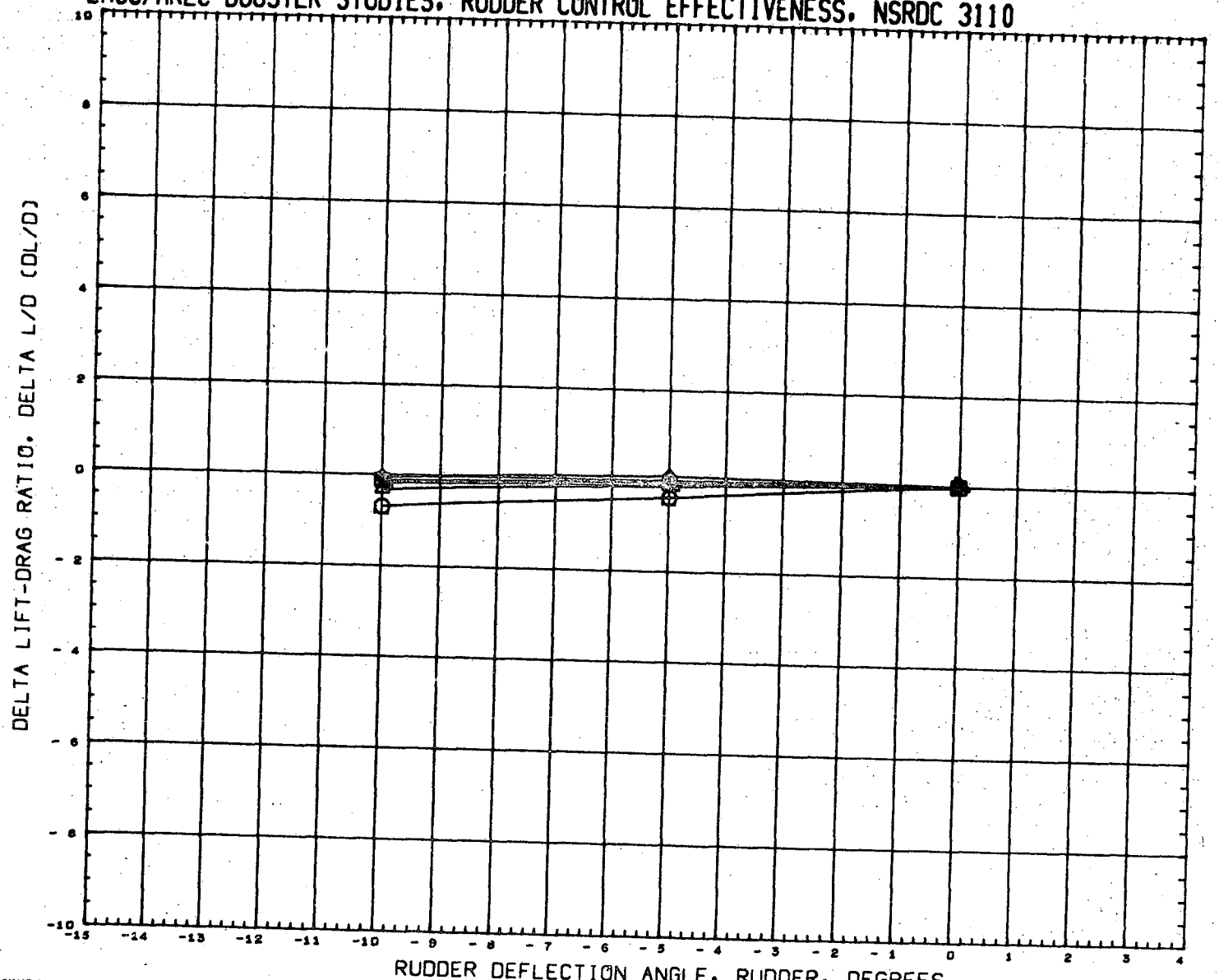
DATASET	RUDDER	DATASET	RUDDER
CN2002	0.000	CN2511	- 5.000
CN2514	- 10.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (CN2002) 17 SEP 71 PAGE 2095

LMSC/HREC BOOSTER STUDIES. RUDDER CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	BETA
□	- 6.000
◇	- 3.000
△	0.000
▽	3.000
○	6.000

PARAMETRIC VALUES

MACH	0.380	ALPHA	0.033		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	AILRON	0.000		
CANARD	0.000	ELEVTR	0.000		
WNGPOS	1.000	CNDFDS	1.000		
DATA HIST. CODE		I#C			

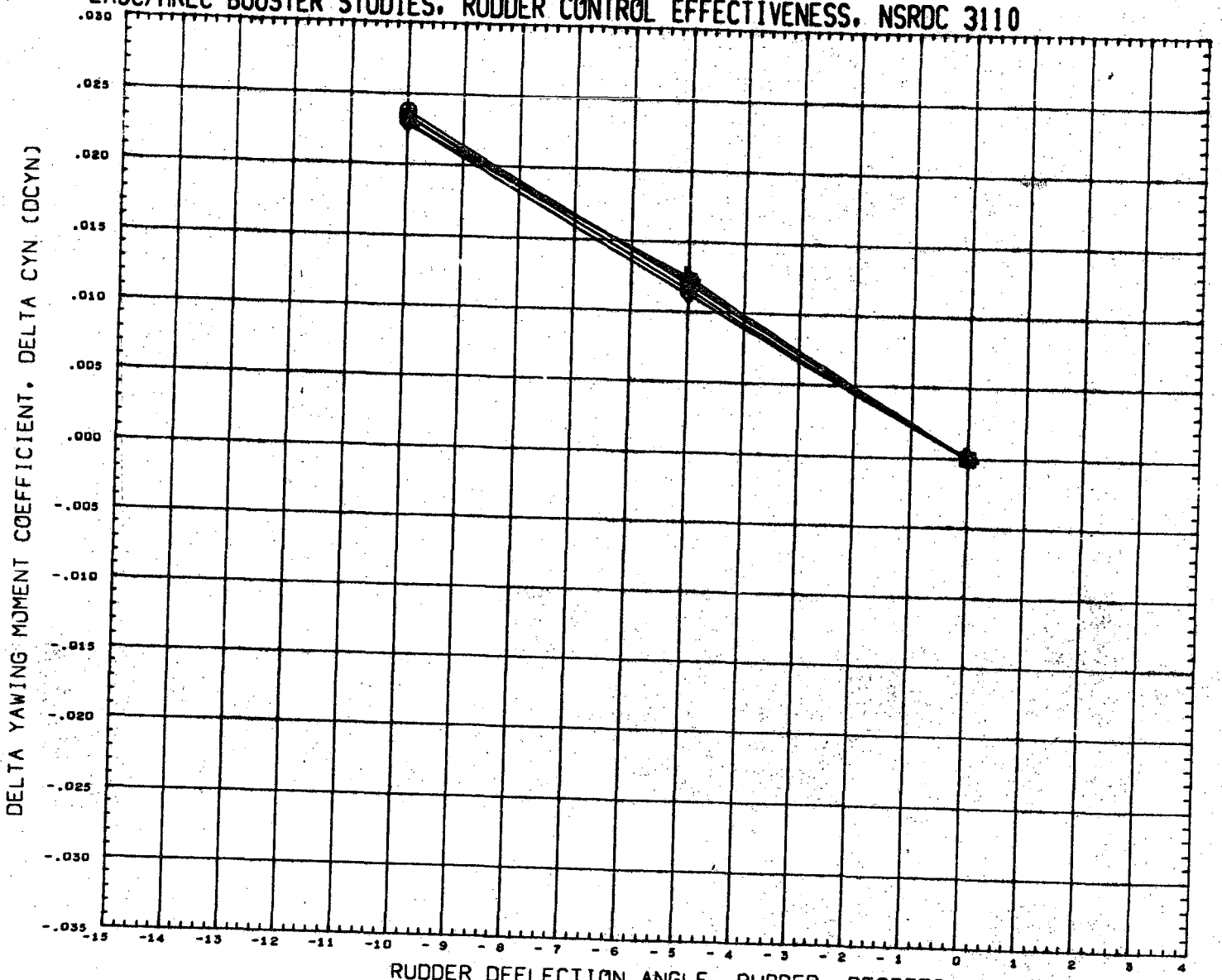
DATA SOURCE

DATASET	RUDDER	DATASET	RUDDER
CN2002	0.000	CN2511	- 5.000
CN2514	- 10.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. RUDDER CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL BETA

- 6.000
- 3.000
0.000
3.000
6.000

PARAMETRIC VALUES

MACH	0.380	ALPHA	- 0.037
INCIDW	0.000	DIHDRL	7.660
AILRON	0.000	ELEVTR	0.000
WNGPOS	1.000		

DATA HIST. CODE I*C

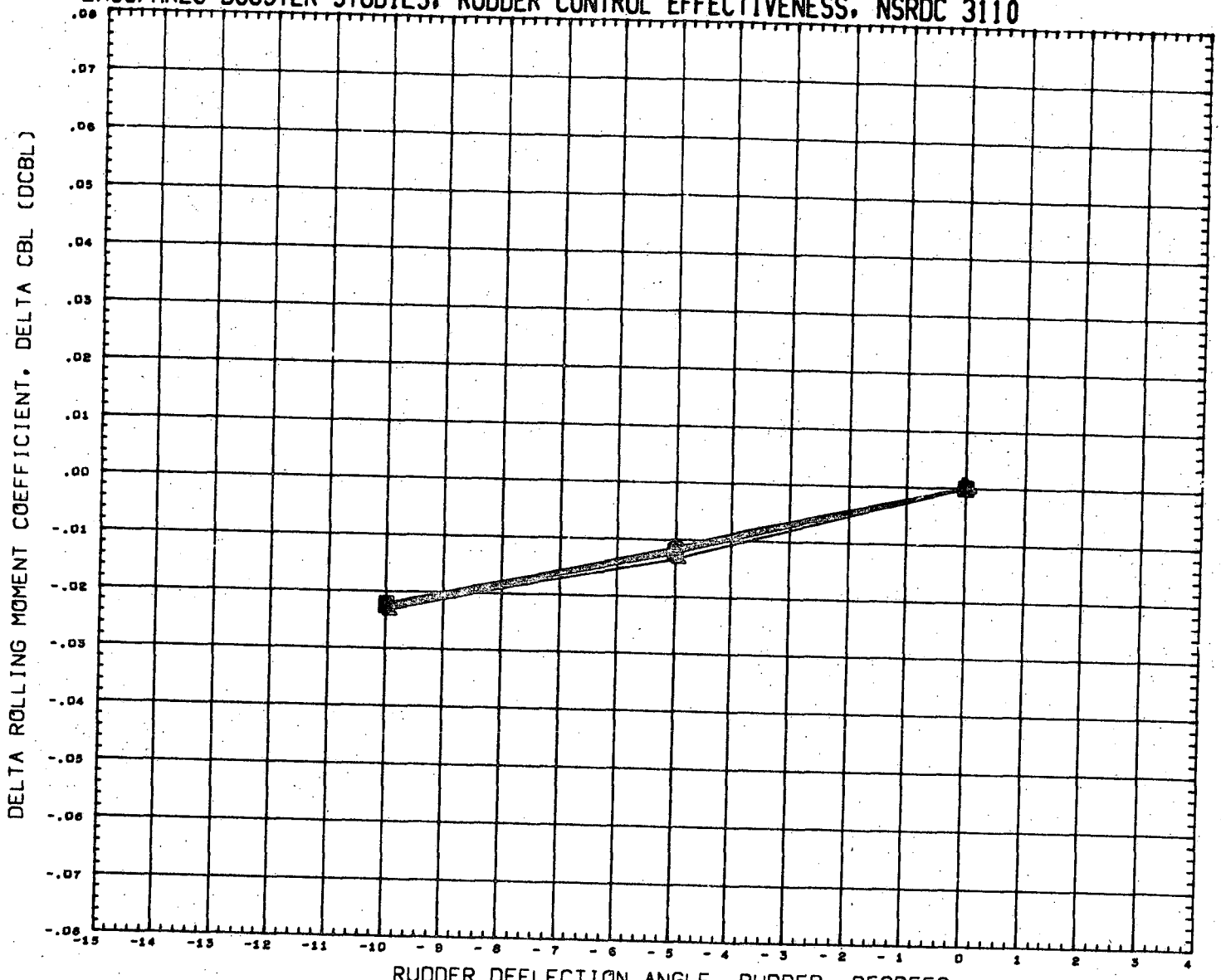
DATA SOURCE

DATASET	RUDDER	DATASET	RUDDER
CN2466	0.000	CN2505	- 5.000
CN2508	- 10.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. RUDDER CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL — BETA

- -6.000
- -3.000
- 0.000
- 3.000
- 6.000

PARAMETRIC VALUES

MACH	0.380
INCIDW	0.000
AILRON	0.000
WNGPOS	1.000

ALPHA	- 0.037
DIHDRL	7.660
ELEVTR	0.000

DATA HIST. CODE I#C

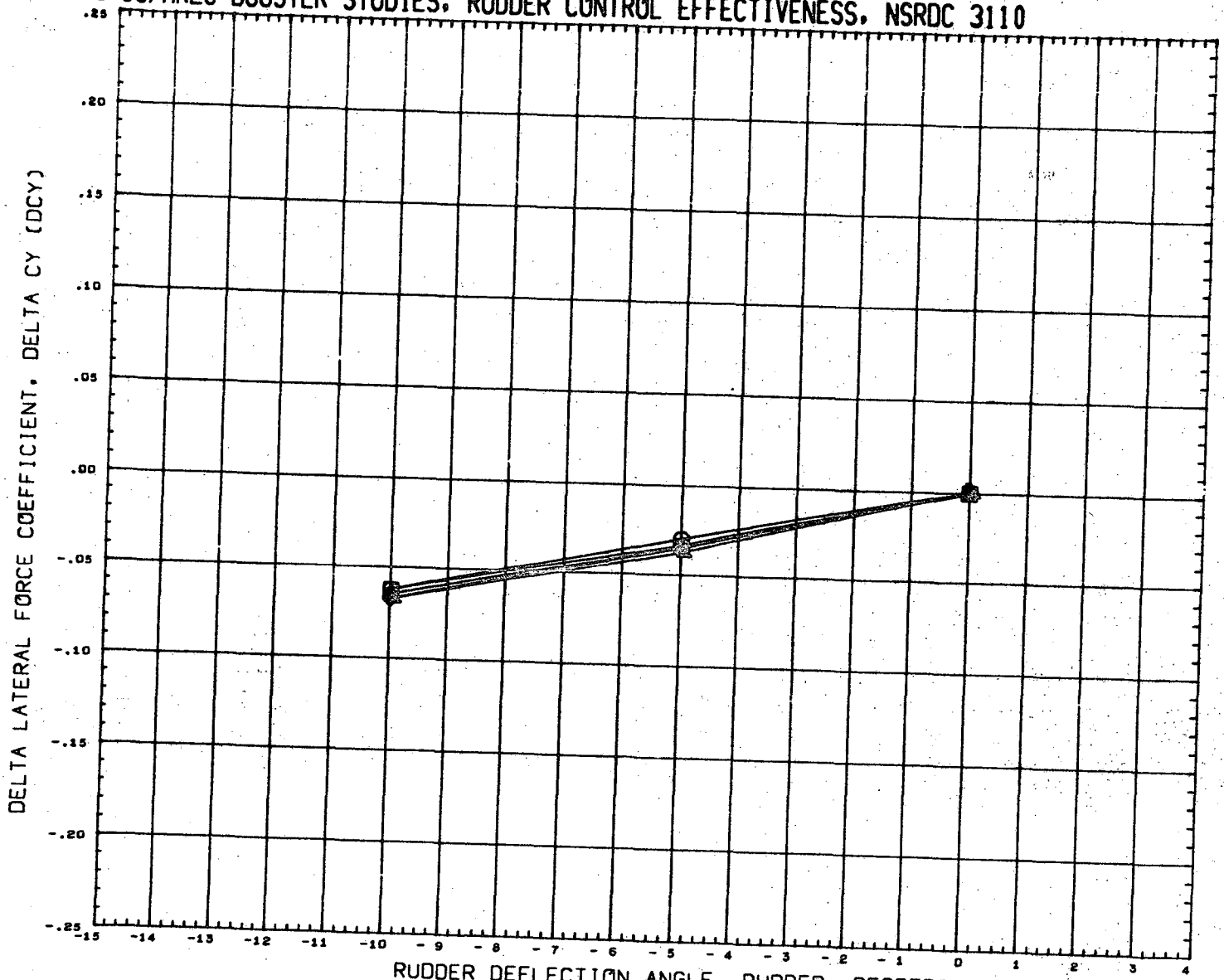
DATA SOURCE

DATASET	RUDDER	DATASET	RUDDER
CN2466	0.000	CN2505	- 5.000
CN2508	- 10.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. RUDDER CONTROL EFFECTIVENESS. NSRDC 3110



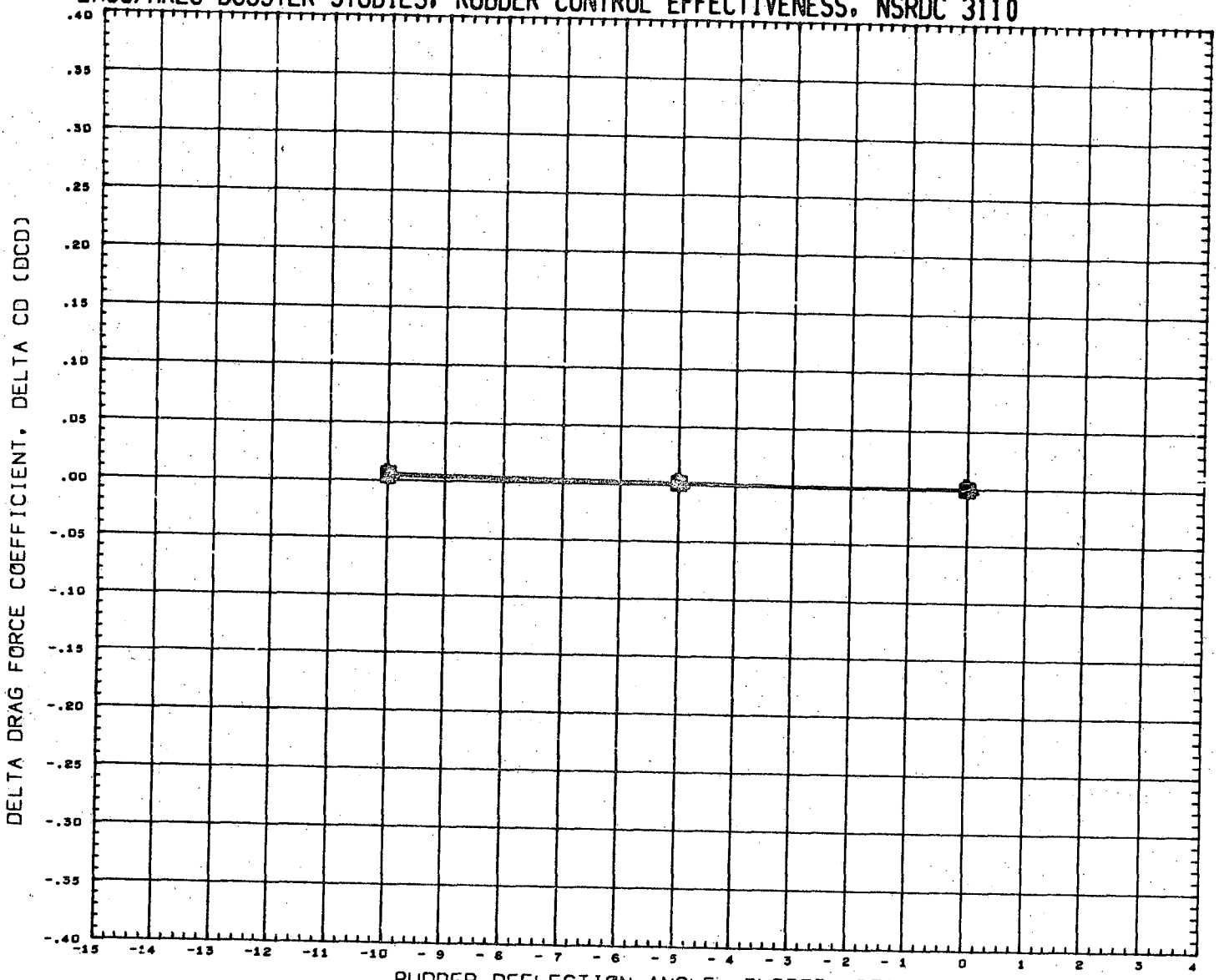
SYMBOL	BETA	MACH	PARAMETRIC VALUES			DATA SOURCE				
	- 6.000	MACH	0.380	ALPHA	- 0.037	DATASET	RUDDER	DATASET	RUDDER	
	- 3.000	INCIDW	0.000	DIHDRL	7.660	CN2466	0.000	CN2505	- 5.000	
	0.000	AILRON	0.000	ELEVTR	0.000	CN2508	- 10.000			
	3.000	WNGPOS	1.000							
	6.000									

DATA HIST. CODE I*C

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110. MSFC/LMSC BOOSTER B1V1W1 (CN2466) 17 SEP 71 PAGE 2099

LMSC/HREC BOOSTER STUDIES. RUDDER CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL BETA

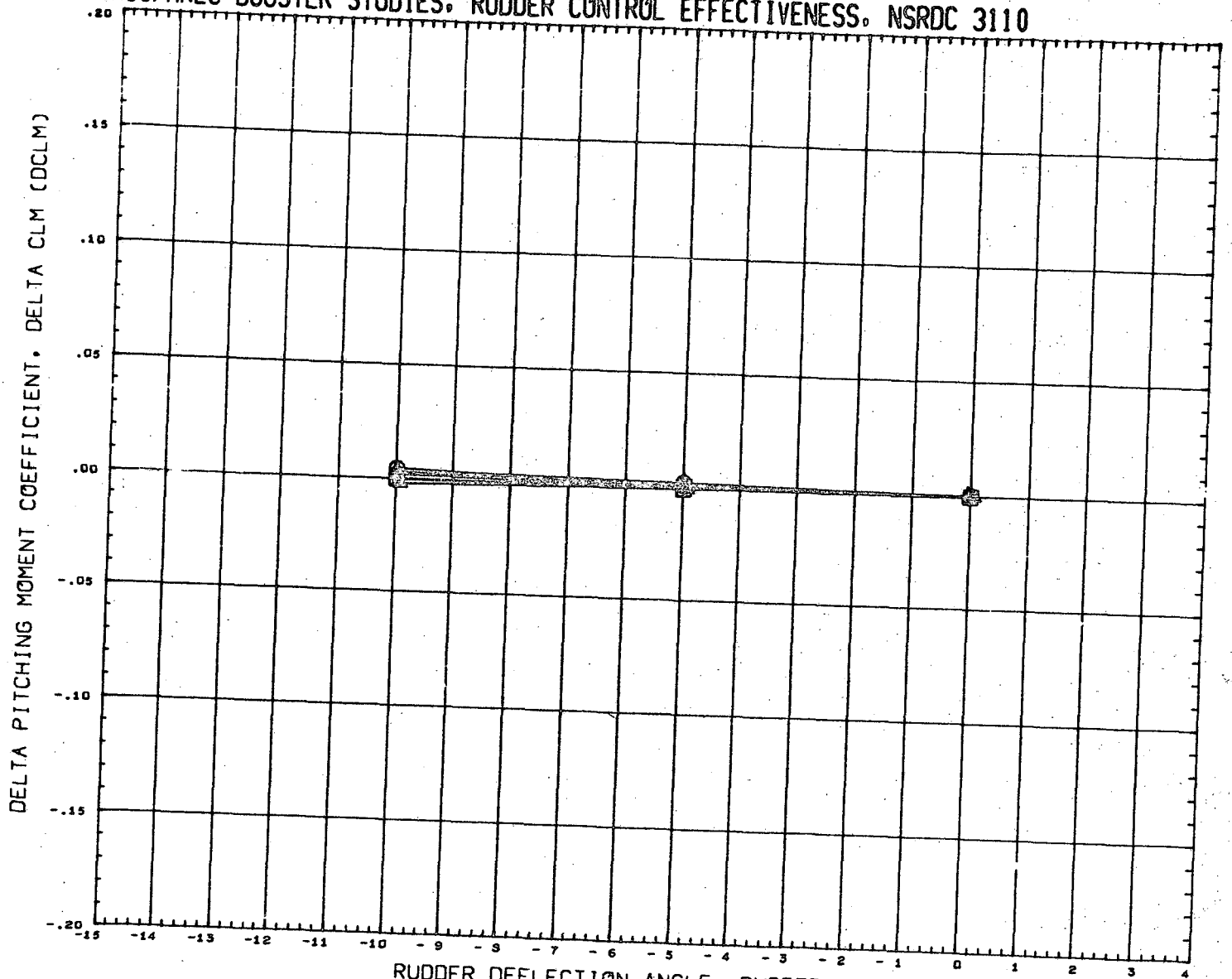
- 6.000
- 3.000
0.000
3.000
6.000

PARAMETRIC VALUES							
MACH	0.380	ALPHA	- 0.037				
INCIDW	0.000	DIHDRL	7.660				
AILRON	0.000	ELEVTR	0.000				
WNGPOS	1.000						
DATA HIST. CODE	I*C						

DATA SOURCE			
DATASET	RUDDER	DATASET	RUDDER
CN2466	0.000	CN2505	- 5.000
CN2508	- 10.000		

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. RUDDER CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	BETA
▽	- 6.000
□	- 3.000
◇	0.000
△	3.000
○	6.000

PARAMETRIC VALUES

MACH	0.380	ALPHA	- 0.037	DATASET	RUDDER
INCIDW	0.000	DIHDRL	7.660	CN2466	0.000
AILRON	0.000	ELEVTR	0.000	CN2508	- 10.000
WNGPOS	1.000				

DATA SOURCE

DATASET	RUDDER
CN2505	- 5.000

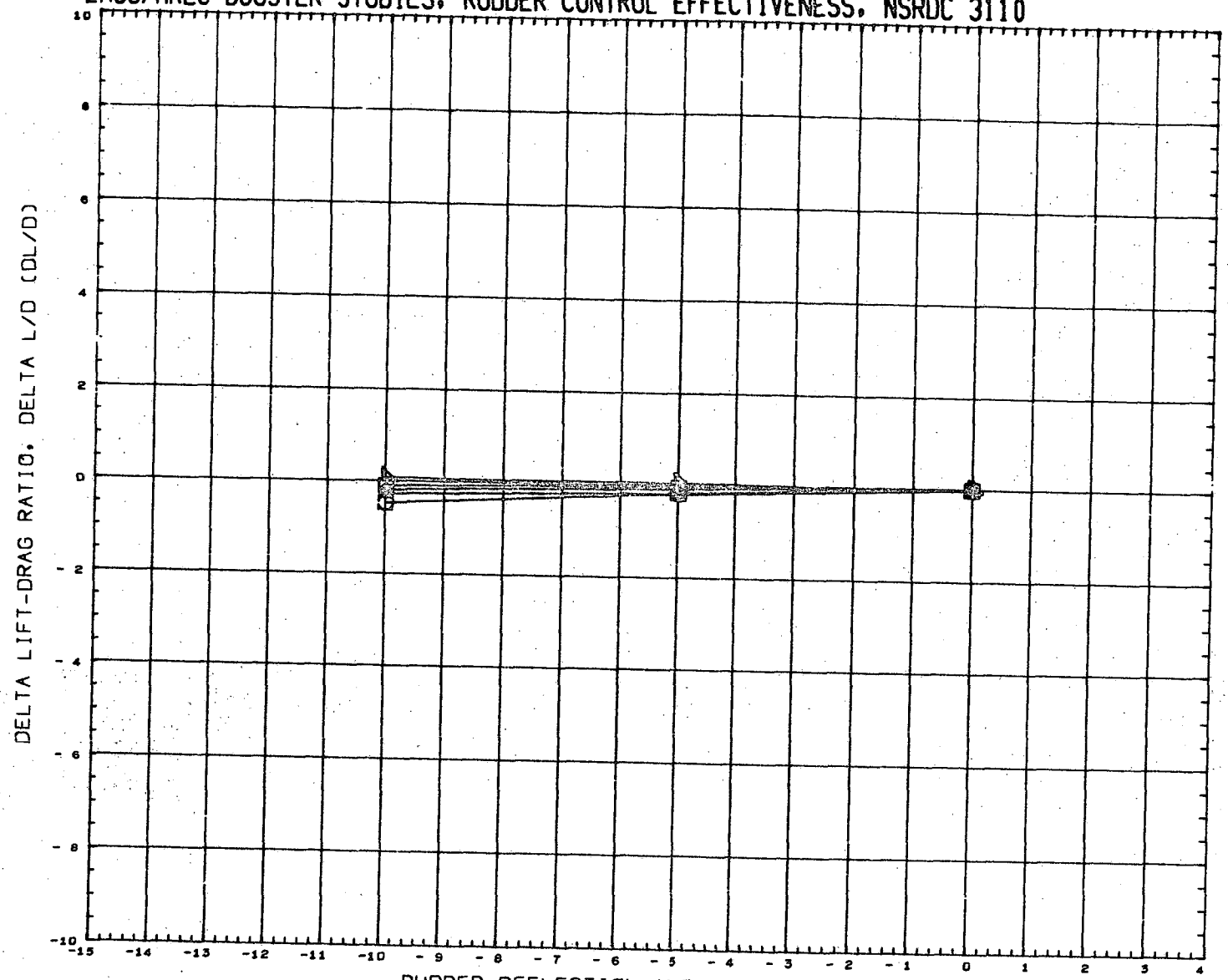
REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

DATA HIST. CODE I*C

NSRDC-3110.MSFC/LMSC BOOSTER B1V1W1 (CN2466) 17 SEP 71 PAGE 2101

LMSC/HREC BOOSTER STUDIES. RUDDER CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	BETA
□	- 6.000
◇	- 3.000
▽	0.000
△	3.000
○	6.000

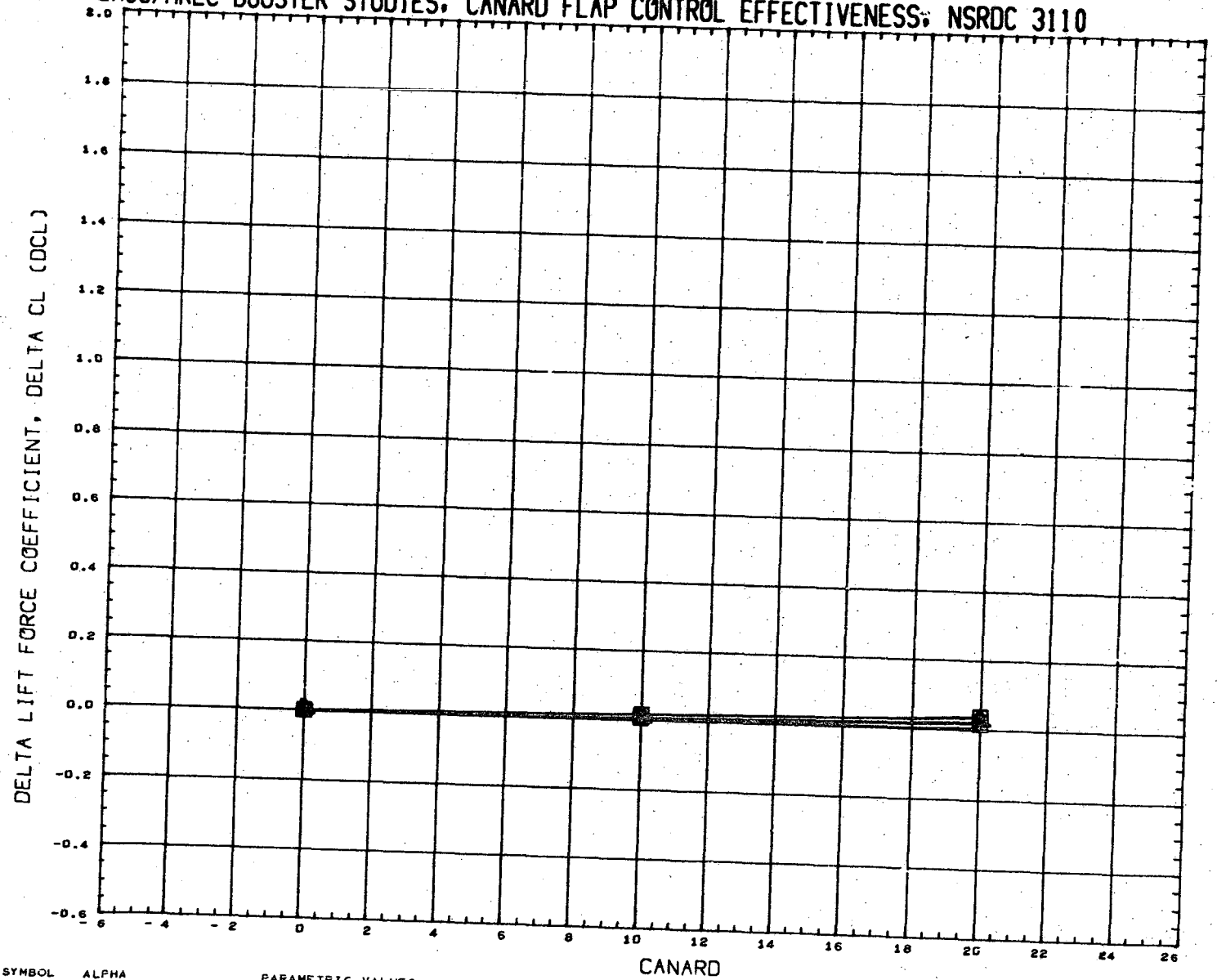
PARAMETRIC VALUES			
MACH	0.360	ALPHA	- 0.037
INCIDW	0.000	DIHDRL	7.660
AILRON	0.000	ELEVTR	0.000
WNGPOS	1.000		

DATA HIST. CODE I*C

DATA SOURCE			
DATASET	RUDDER	DATASET	RUDDER
CN2466	0.000	CN2505	- 5.000
CN2508	- 10.000		

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, CANARD FLAP CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	- 2.000
□	0.000
◇	4.000
△	6.000
○	8.000
	10.000

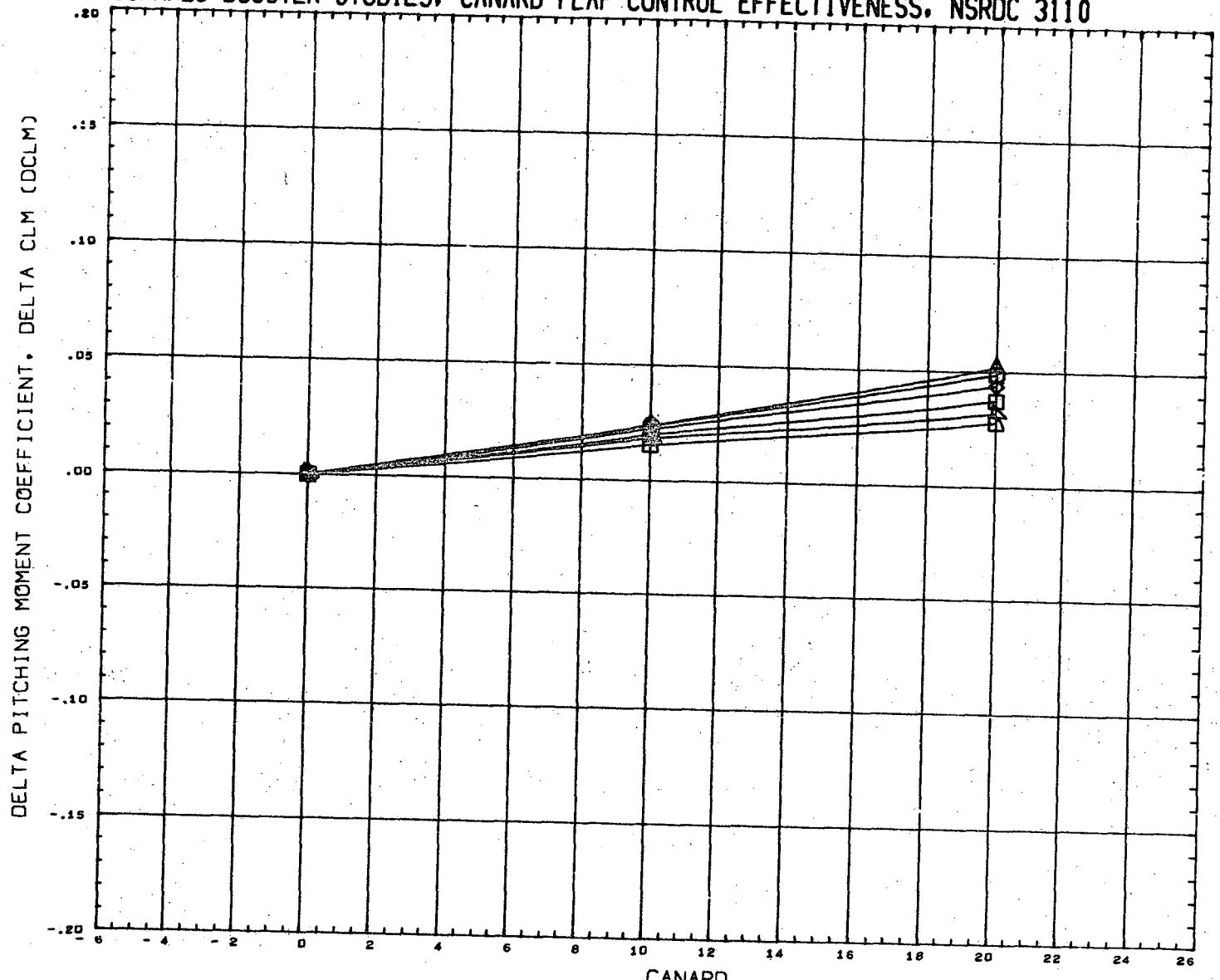
	PARAMETRIC VALUES		
MACH	0.380	BETA	- 0.000
INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
ELEVTR	- 20.000	RUDDER	0.000
WNGPOS	1.000	CNDPOS	1.000
DATA HIST. CODE		I*C	

DATA SOURCE				
DATASET	CANARD	DATASET	CANARD	
DN2329	0.000	DN2333	10.000	
DN2337	20.000			

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2329) 17 SEP 71 PAGE 2103

LMSC/HREC BOOSTER STUDIES, CANARD FLAP CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
	- 2.000
	0.000
	4.000
	6.000
	8.000
	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.000		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	AILRON	0.000		
ELEVTR	- 20.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

DATA SOURCE

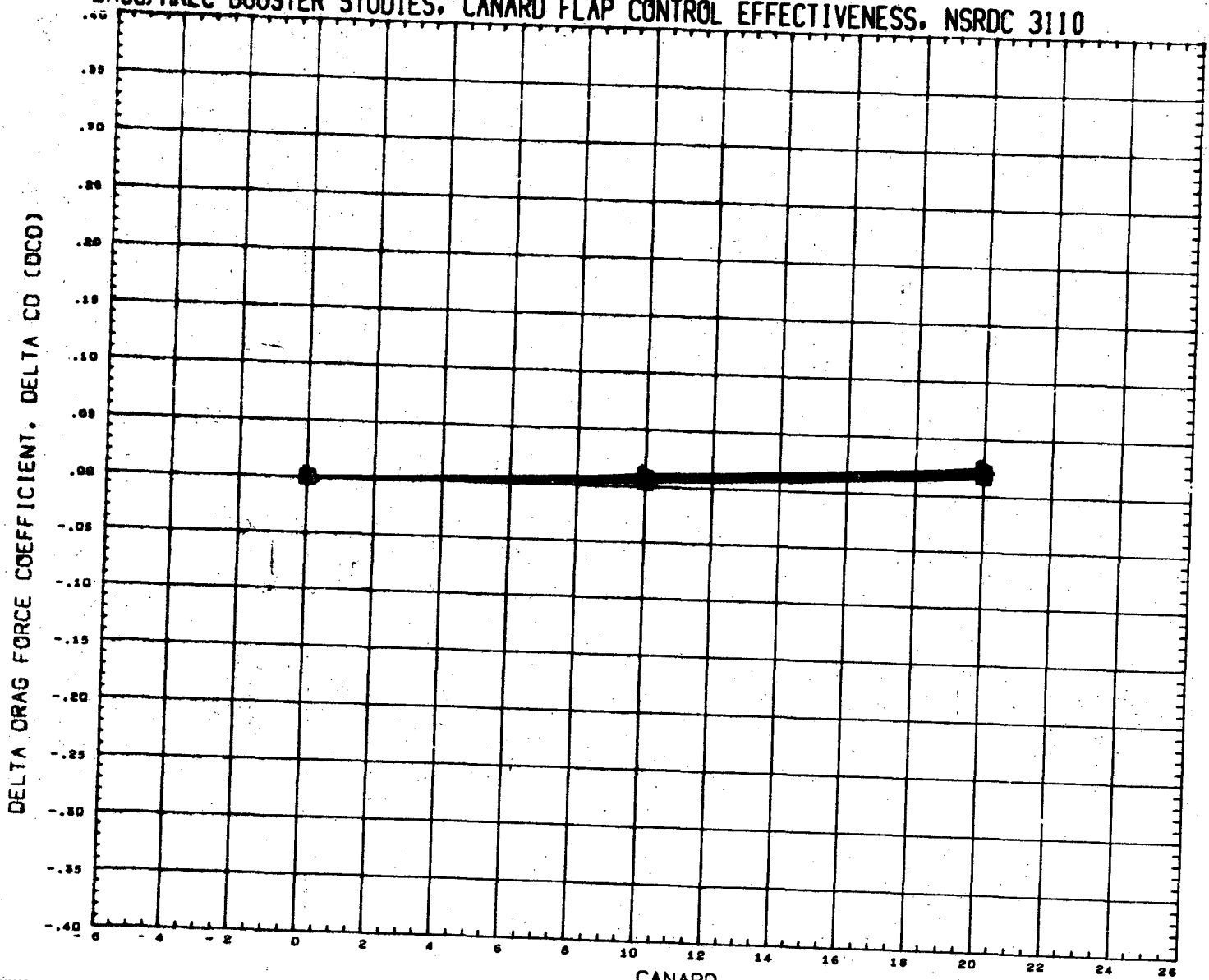
DATASET	CANARD	DATASET	CANARD
DN2329	0.000	DN2333	10.000
DN2337	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2329) 17 SEP 71 PAGE 2104

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
□	- 2.000
◇	0.000
△	4.000
▽	6.000
○	8.000
⊲	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.000	DATASET	CANARD
INCIDC	5.000	INCIDW	0.000	DN2329	0.000
DIHDRL	7.660	AILRON	0.000	DN2337	20.000
ELEVTR	- 20.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA MIST. CODE		I#C			

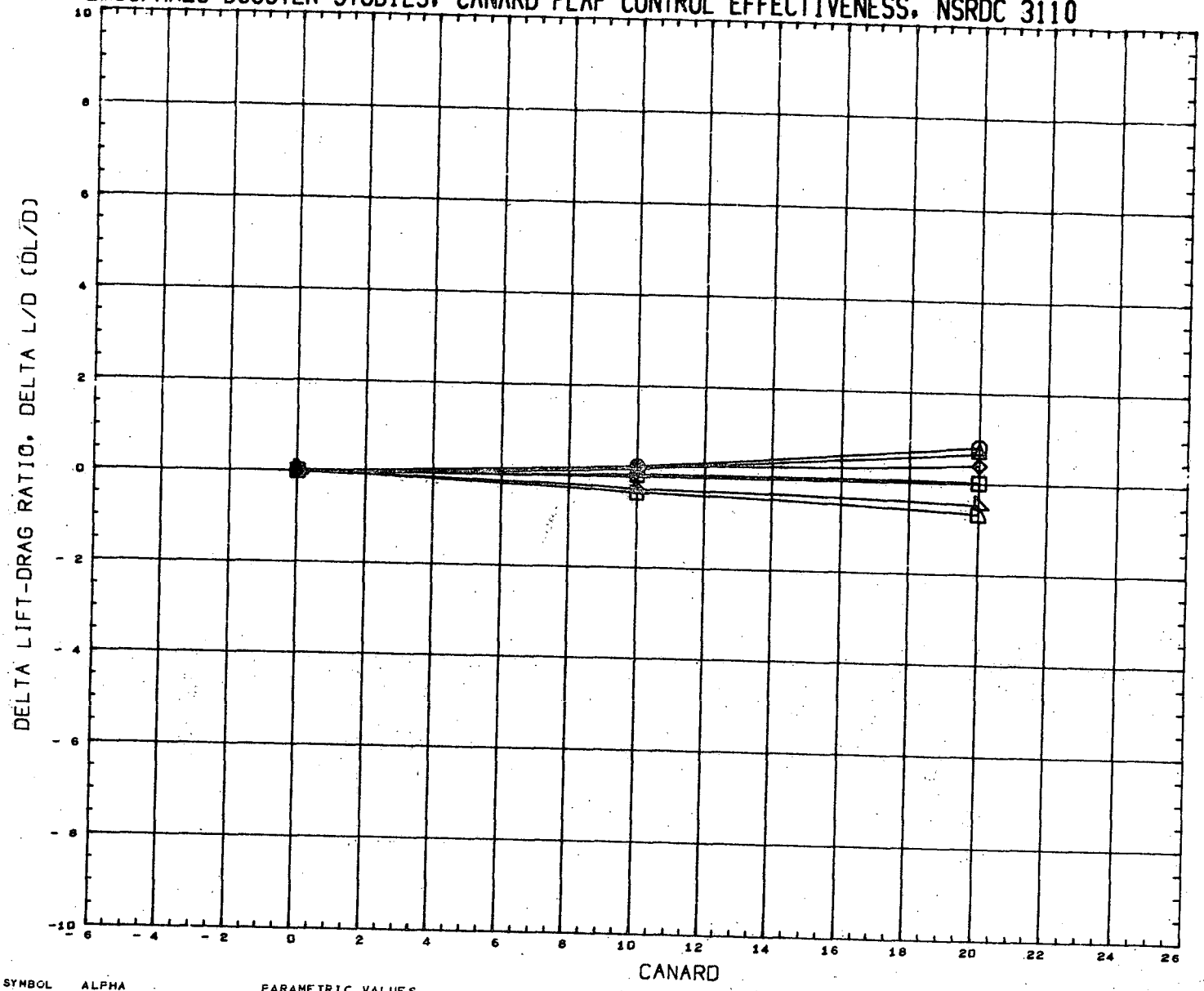
DATA SOURCE

DATASET	CANARD
DN2333	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.8000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.000		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	AILRON	0.000		
ELEVTR	- 20.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE		I*C			

DATA SOURCE

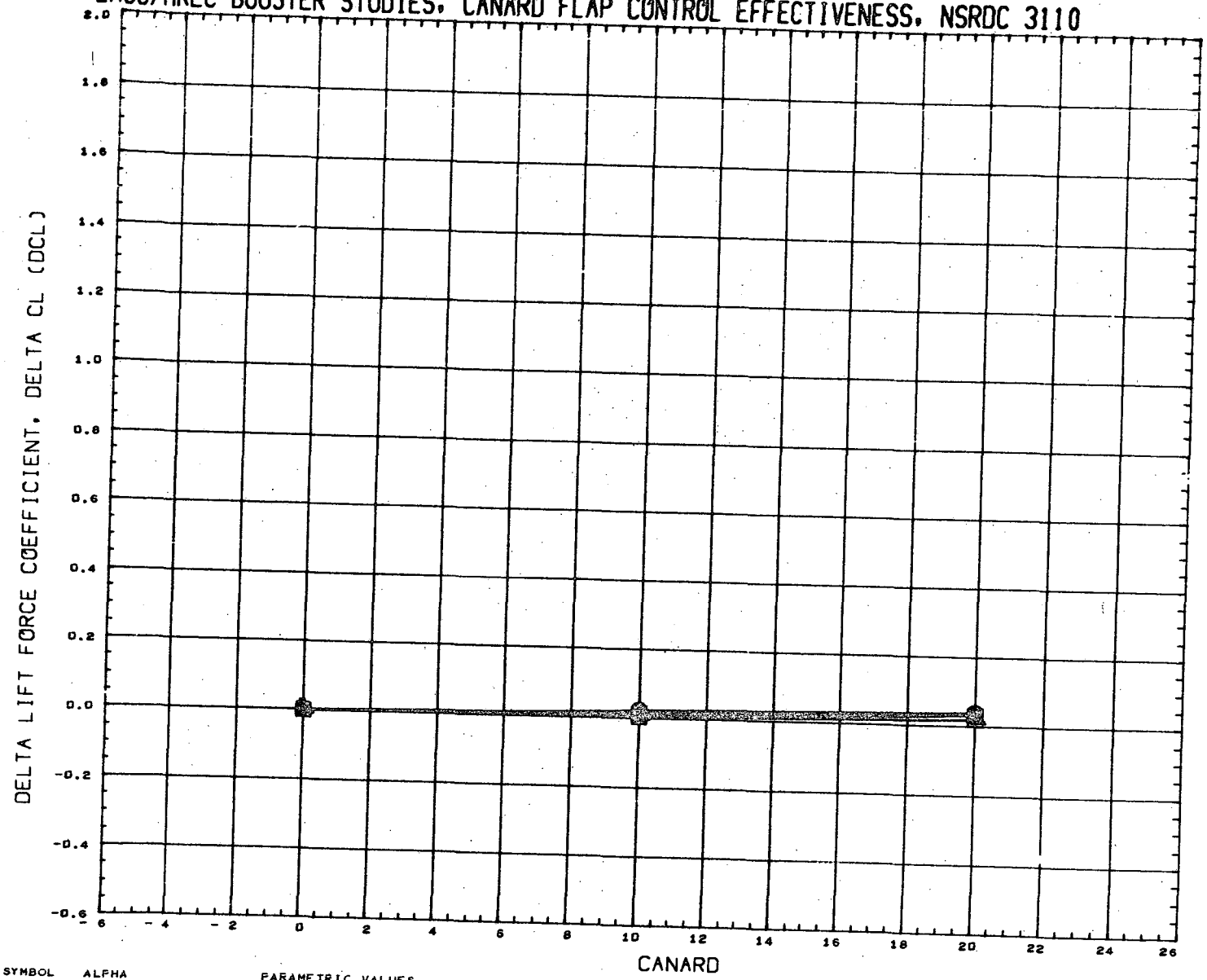
DATASET	CANARD	DATASET	CANARD
DN2329	0.000	DN2333	10.000
DN2337	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2329) 17 SEP 71 PAGE 2106

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	- 2.000
◩	0.000
□	4.000
◇	6.000
▷	8.000
○	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.001	DATASET	CANARD
INCIDC	3.000	INCIDW	0.000	DN2341	0.000
DIHDRL	7.660	AILRON	0.000	DN2349	20.000
ELEVTR	- 10.000	RUDDER	0.000		
WNGPOS	1.000	CNDFOS	1.000		
DATA HIST. CODE		I*C			

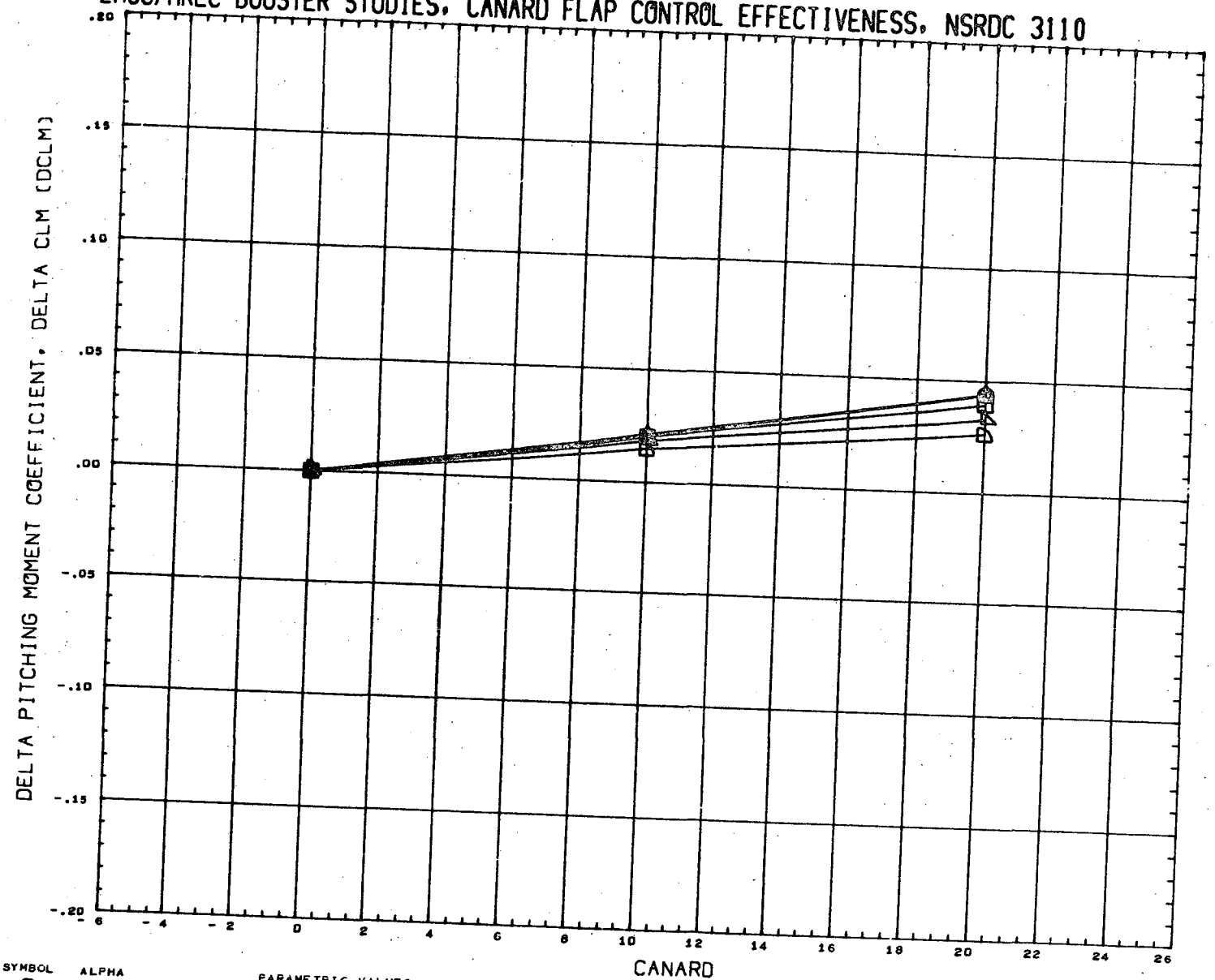
DATA SOURCE

DATASET	CANARD
DN2345	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, CANARD FLAP CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
▽	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.001	DATASET	CANARD
INCIDC	3.000	INCIDW	0.000	DN2341	0.000
DIHDRL	7.660	AILRON	0.000	DN2349	20.000
ELEVTR	- 10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

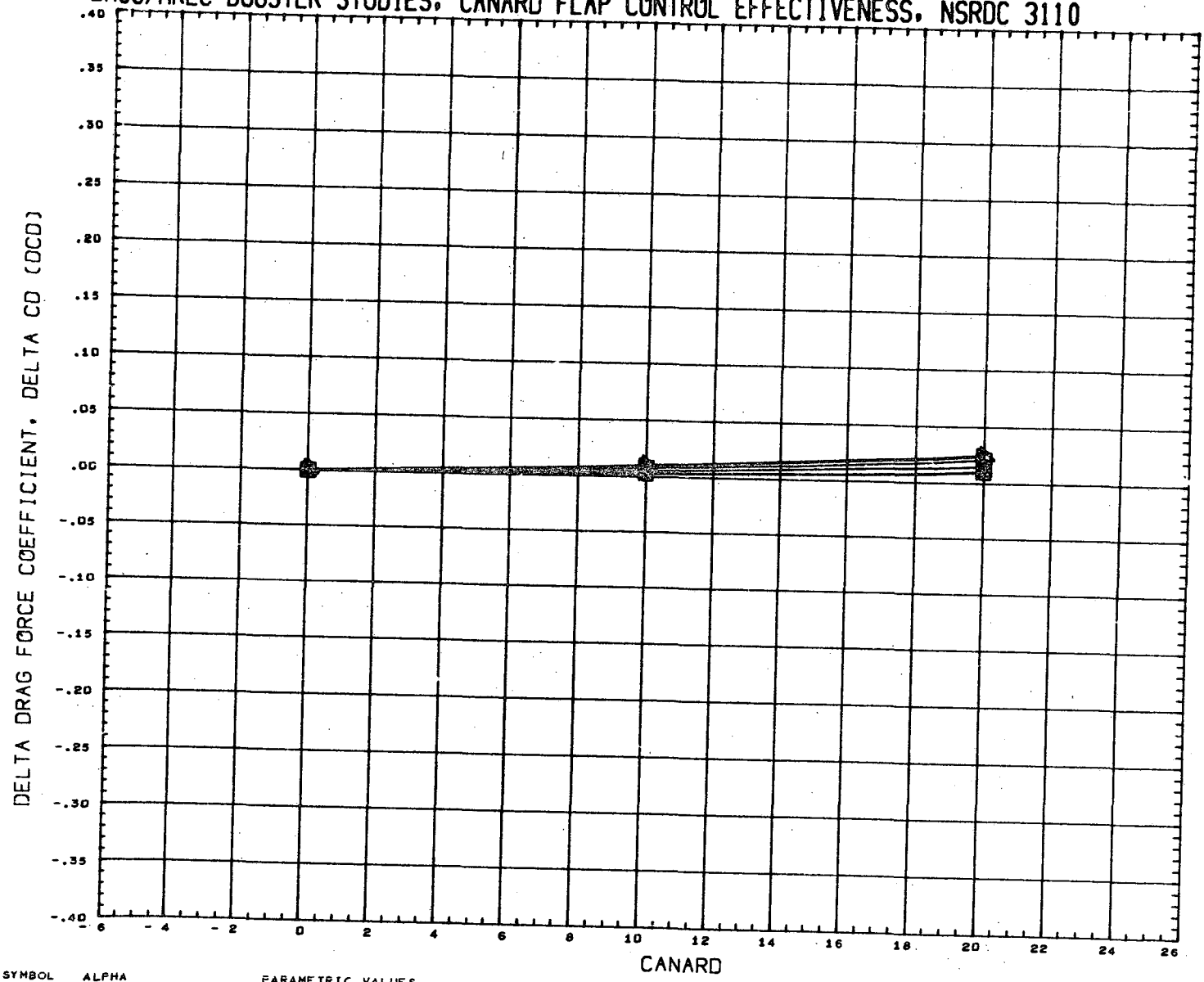
DATA SOURCE

DATASET	CANARD
DN2345	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, CANARD FLAP CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	-2.000
△	0.000
◇	4.000
□	6.000
◸	8.000
O	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.001		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	AILRON	0.000		
ELEVTR	-10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

DATA SOURCE

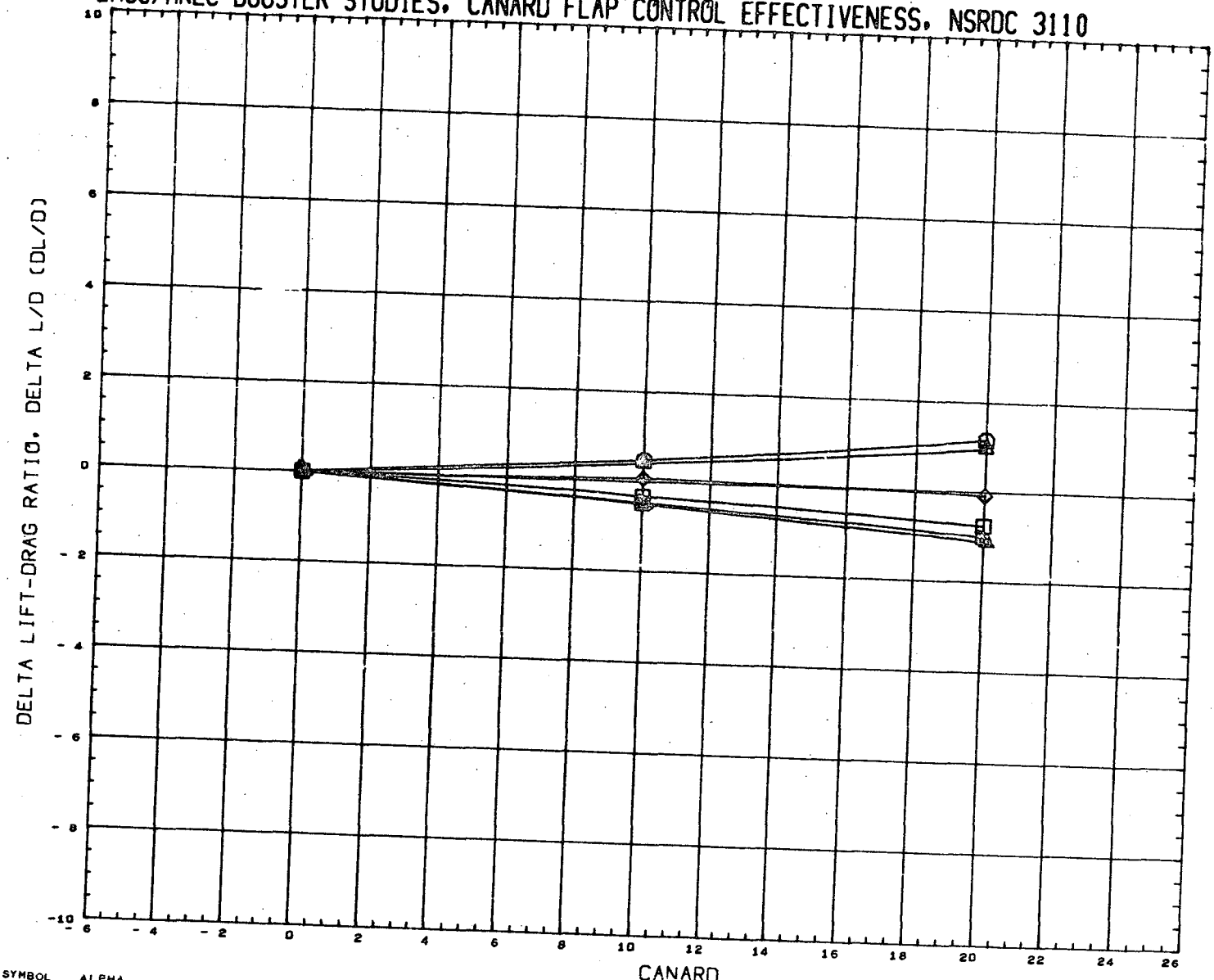
DATASET	CANARD
DN2341	0.000
DN2349	20.000
DN2343	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2341) 17 SEP 71 PAGE 2109

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
◪	0.000
□	4.000
◇	6.000
▷	8.000
○	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-	0.001
INCIDC	3.000	INCIDW		0.000
DIHDRL	7.660	AILRON		0.000
ELEVTR	- 10.000	RUDDER		0.000
WNGPOS	1.000	CNDPOS		1.000
DATA HIST. CODE	I*C			

DATA SOURCE

DATASET	CANARD
DN2341	0.000
DN2349	20.000

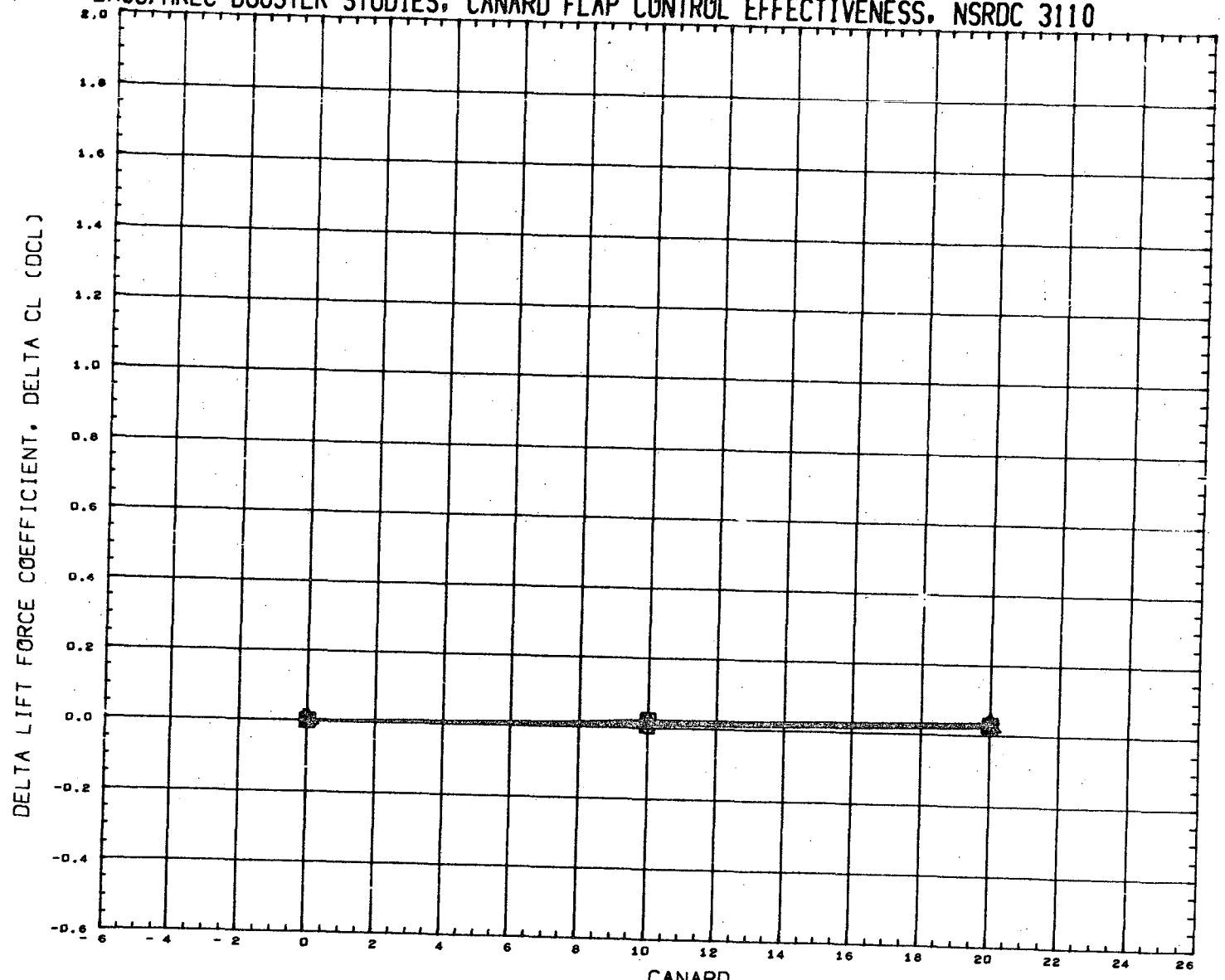
DATASET	CANARD
DN2345	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2341) 17 SEP 71 PAGE 2110

LMSC/HREC BOOSTER STUDIES, CANARD FLAP CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
○	-2.000
▽	0.000
△	4.000
◇	6.000
□	8.000
◸	10.000

MACH	0.380
INCIDC	3.000
DIHDRL	7.660
ELEVTR	0.000
WNGPOS	1.000
DATA HIST. CODE	I#C

PARAMETRIC VALUES

BETA	-0.019
INCIDW	0.000
AILRON	0.000
RUDDER	0.000
CNDPOS	1.000

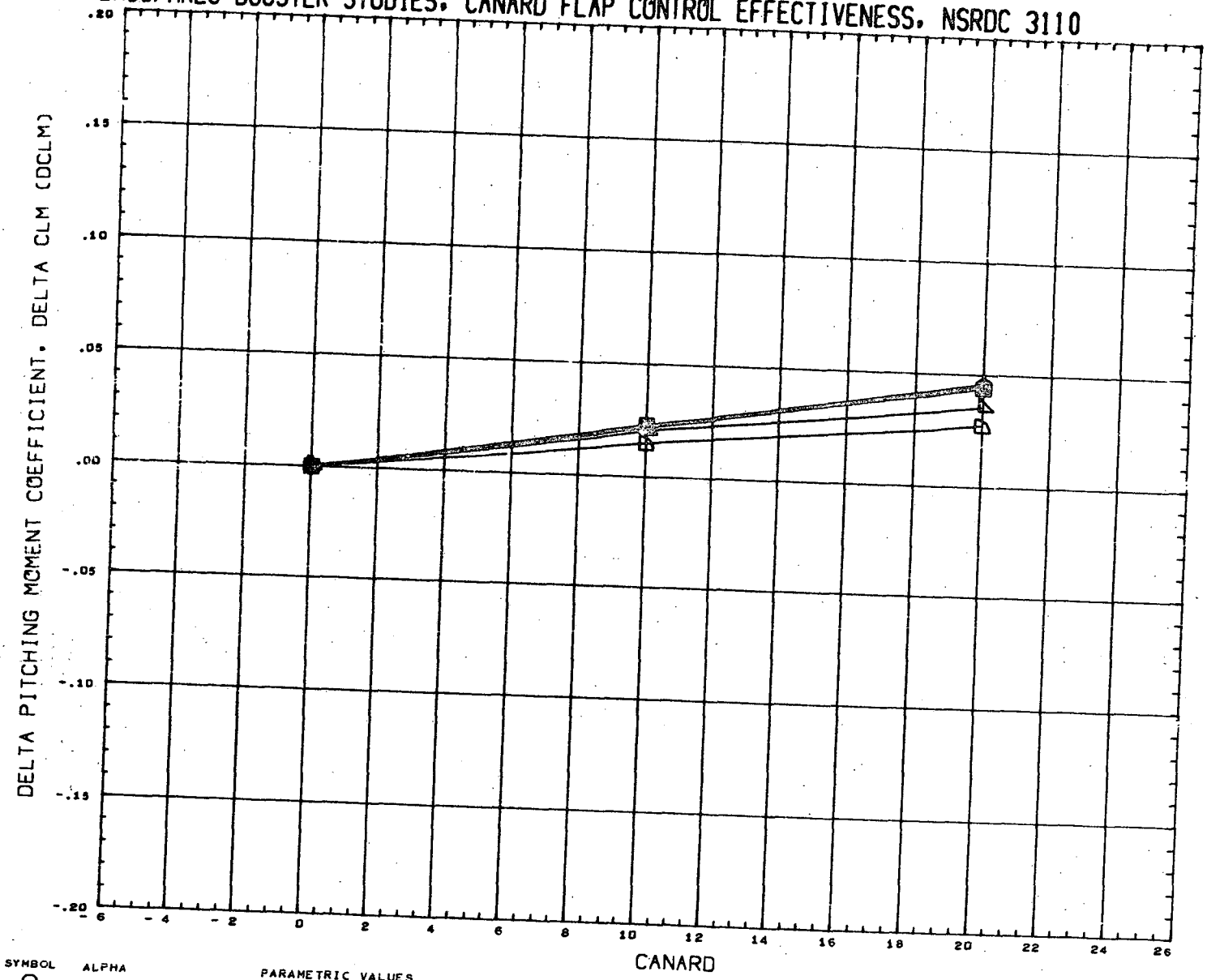
DATA SOURCE

DATASET	CANARD
DN2001	0.000
DN2325	20.000
DN2321	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	- 2.000
□	0.000
◇	4.000
◁	6.000
▷	8.000
O	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.019	DATASET	CANARD
INCIDC	3.000	INCIDW	0.000	DN2001	0.000
DIHDRL	7.660	AILRON	0.000	DN2325	20.000
ELEVTR	0.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE		I#C			

DATA SOURCE

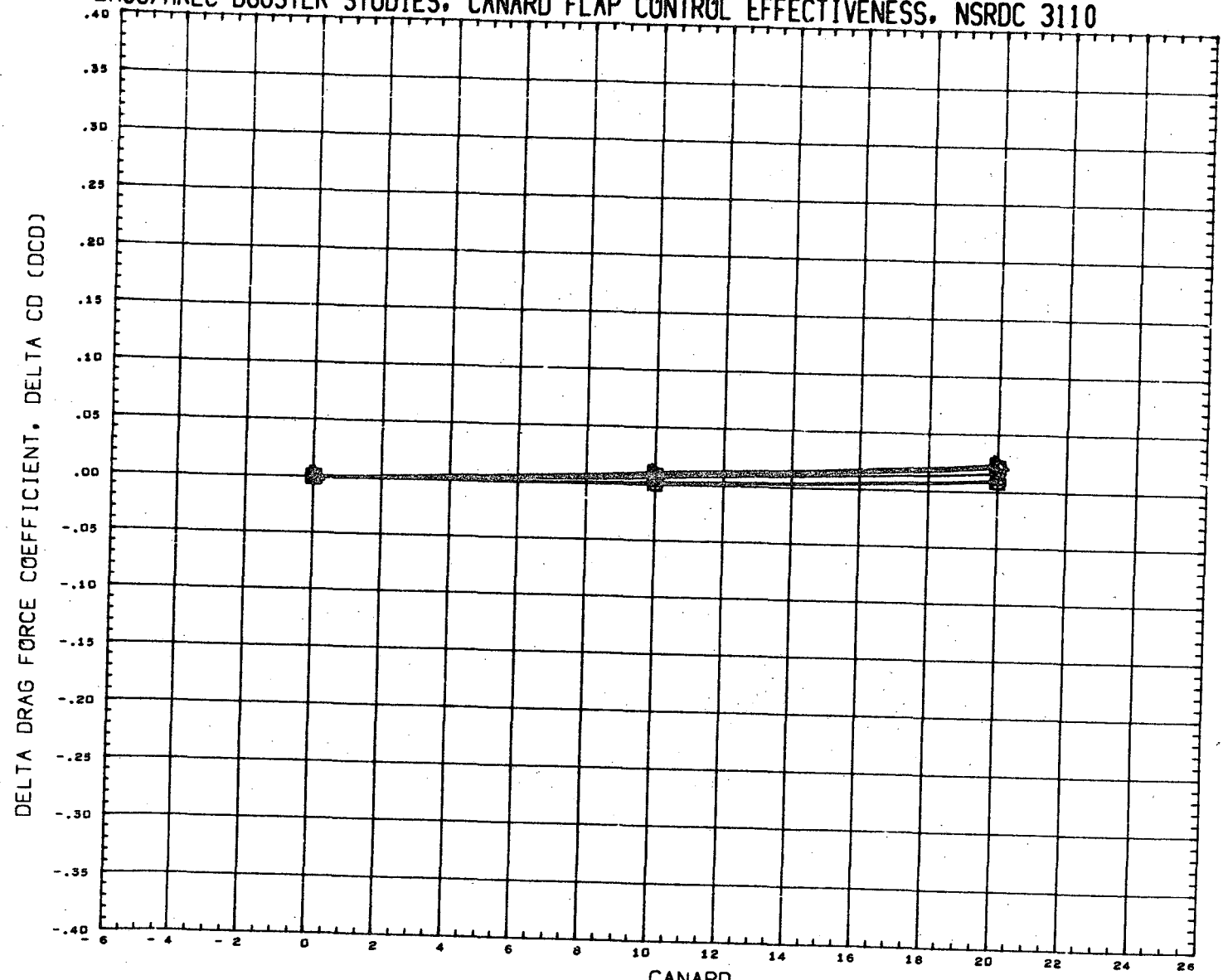
DATASET	CANARD
DN2321	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2001) 17 SEP 71 PAGE 2112

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
▽	0.000
△	4.000
◇	5.000
□	8.000
▷	10.000

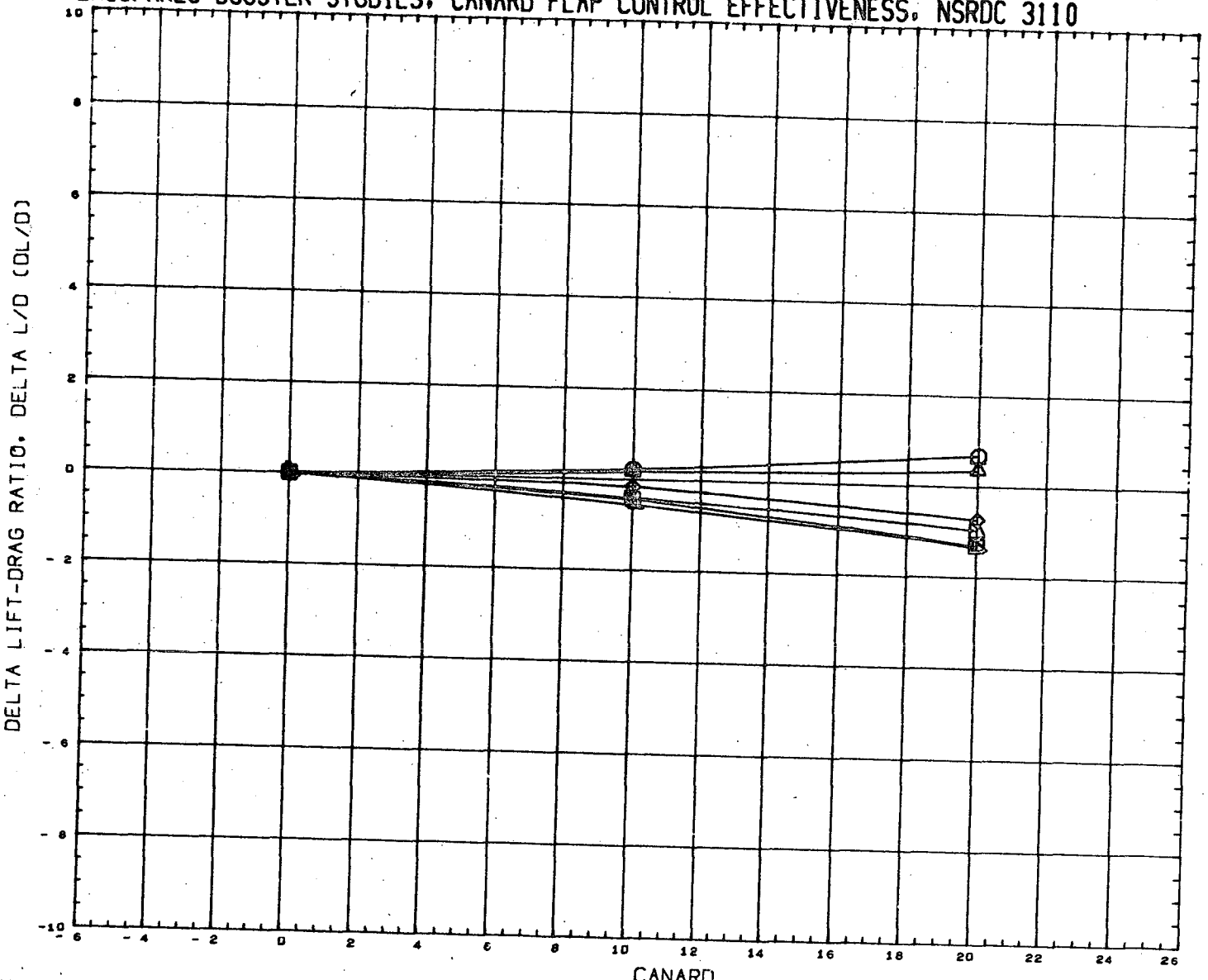
PARAMETRIC VALUES					
MACH	0.380	BETA	-0.019		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	AILRON	0.000		
ELEVTR	0.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE		I*C			

DATA SOURCE			
DATASET	CANARD	DATASET	CANARD
DN2001	0.000	DN2321	10.000
DN2325	20.000		

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2001) 17 SEP 71 PAGE 2113

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALFHA
D	-2.000
▱	0.000
□	4.000
◇	6.000
△	8.000
O	10.000

MACH	0.380	BETA	- 0.019	DATASET	CANARD
INCIDC	3.000	INCIDW	0.000	DN2001	0.000
DIHDRL	7.660	AILRON	0.000	DN2325	20.000
ELEVTR	0.000	RUDDER	0.000		
WNGFOS	1.000	CNDFOS	1.000		
DATA HIST. CODE		I#C			

PARAMETRIC VALUES

DATA SOURCE

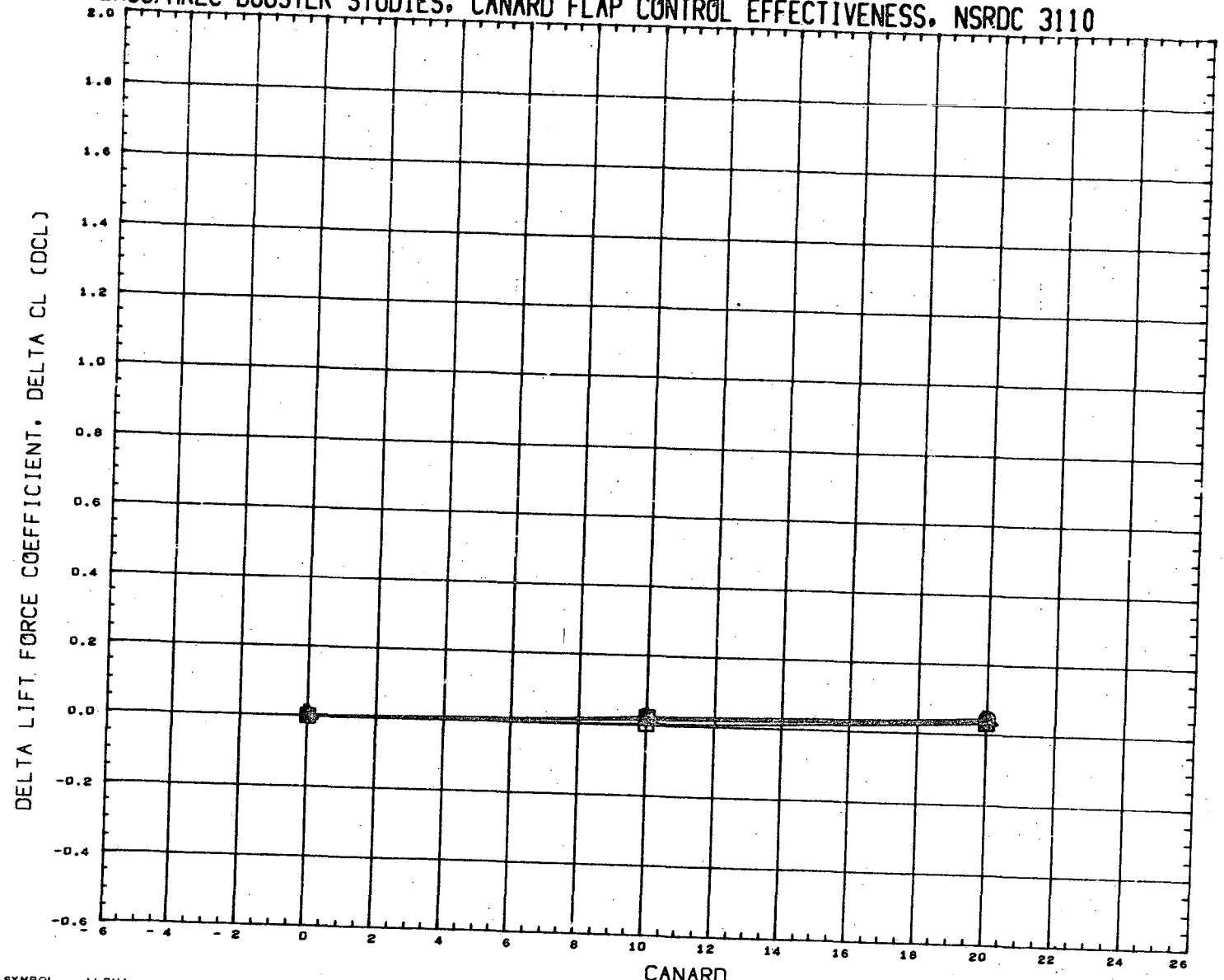
DATASET	CANARD
DN2321	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2001) 17 SEP 71 PAGE 2114

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
▽	-2.000
○	0.000
◇	4.000
□	6.000
△	8.000
▽	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	0.000	
INCIDC	3.000	INCIDW	0.000	
DIHDRL	7.660	AILRON	0.000	
ELEVTR	10.000	RUDDER	0.000	
WNGPOS	1.000	CNDFCS	1.000	
DATA HIST. CODE	I*C			

DATA SOURCE

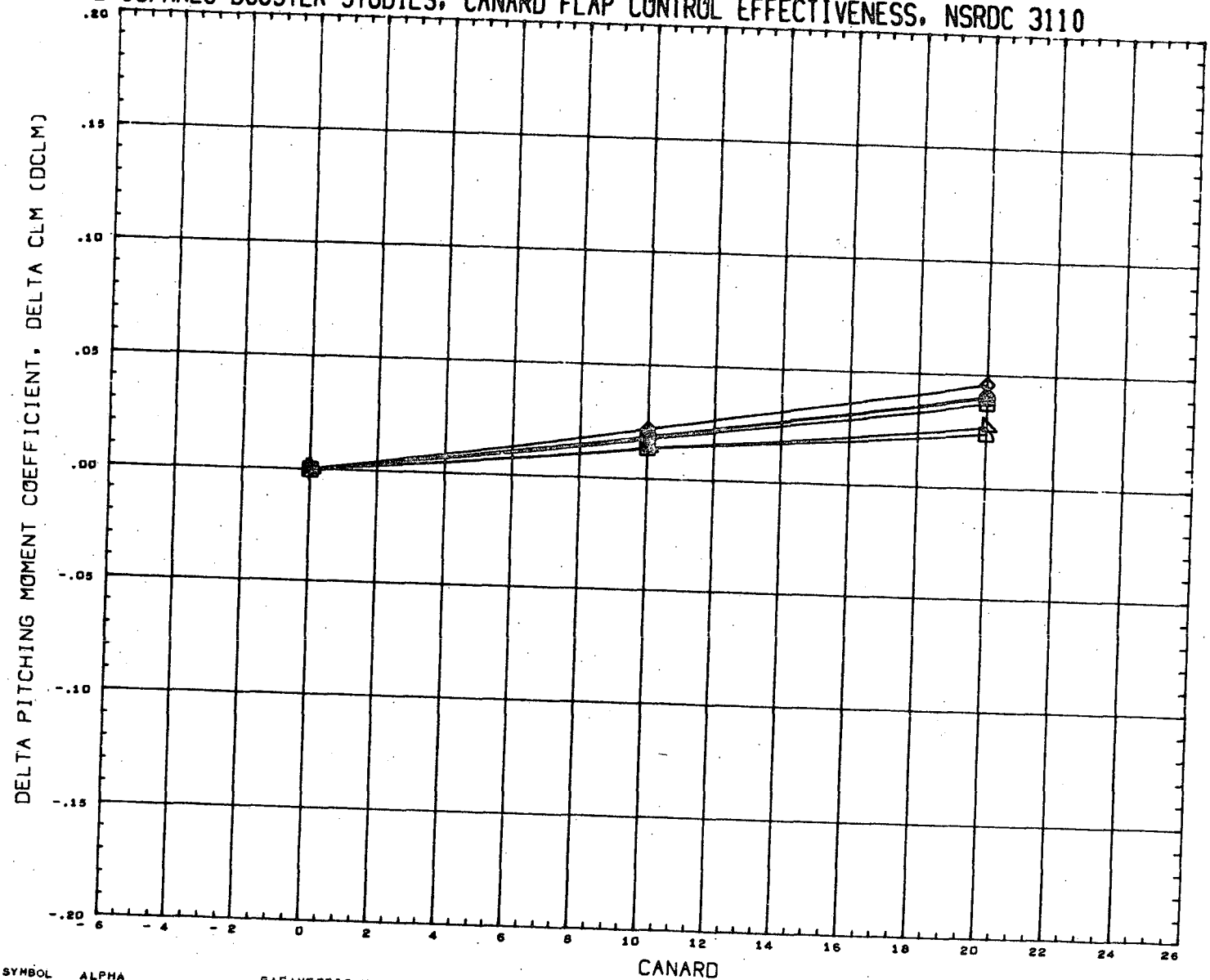
DATASET	CANARD	DATASET	CANARD
DN2353	0.000	DN2357	10.000
DN2361	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2353) 17 SEP 71 PAGE 2115

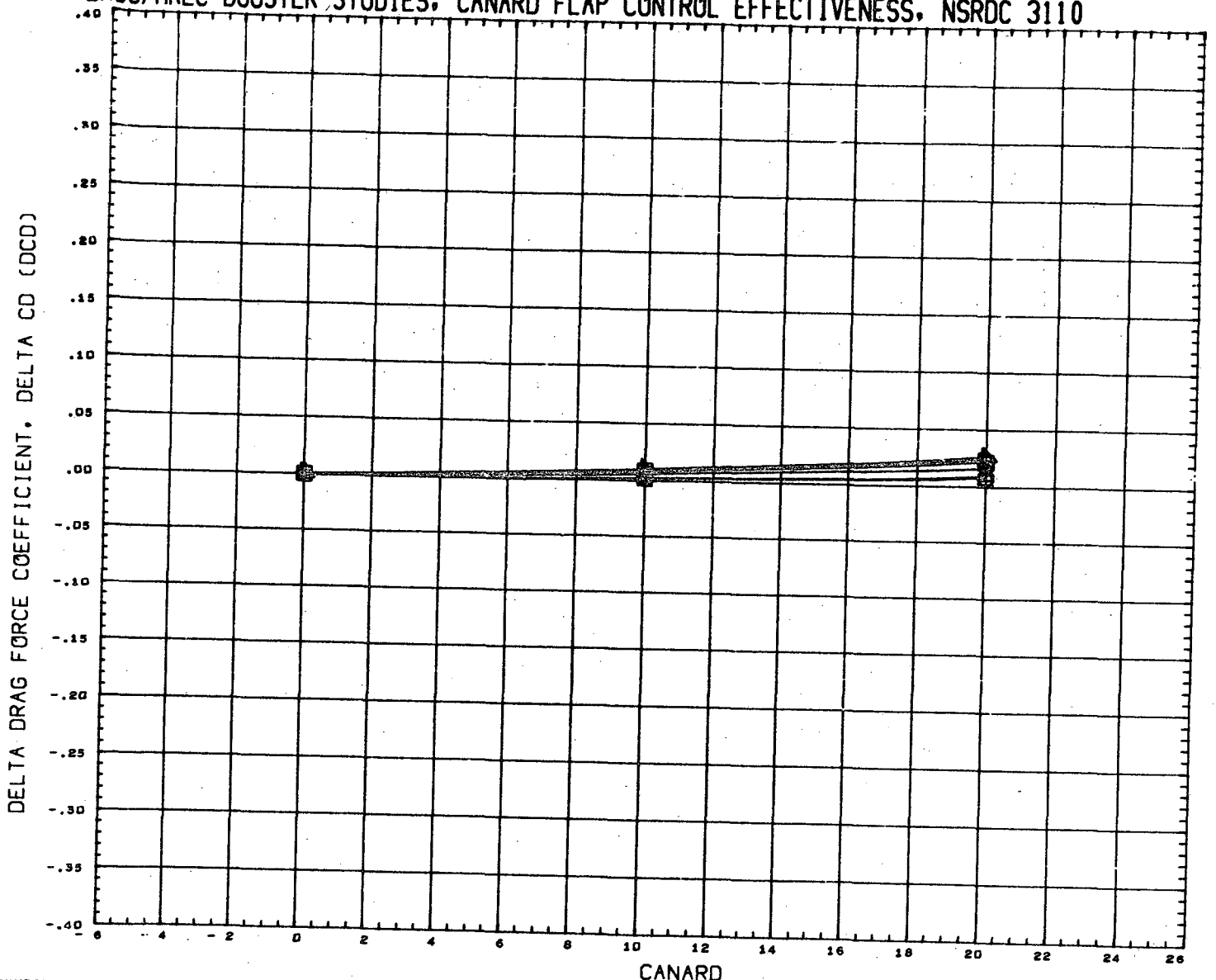
LMSC/HREC BOOSTER STUDIES, CANARD FLAP CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
D	-2.000	MACH	0.380	BETA	0.000	DATASET	CANARD	DATASET	CANARD	SREF	1.3550	SQ.FT.
□	0.000	INCIDC	3.000	INCIDW	0.000	DN2353	0.000	DN2357	10.000	LREF	41.4360	INCHES
◇	4.000	DIHDRL	7.660	AILRON	0.000	DN2361	20.000			BREF	41.4360	INCHES
△	6.000	ELEVTR	10.000	RUDDER	0.000					XMRP	31.1400	INCHES
○	8.000	WNGPOS	1.000	CNDPOS	1.000					YMRP	0.0000	INCHES
	10.000	DATA HIST. CODE		I*C						ZMRP	0.2250	INCHES
										SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2353) 17 SEP 71 PAGE 2116

LMSC/HREC BOOSTER STUDIES, CANARD FLAP CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
▽	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.360	BETA	0.000	
INCIDC	3.000	INCIDW	0.000	
DIHDRL	7.660	AILRON	0.000	
ELEVTR	10.000	RUDDER	0.000	
WNGPOS	1.000	CNDPOS	1.000	
DATA HIST. CODE		I#C		

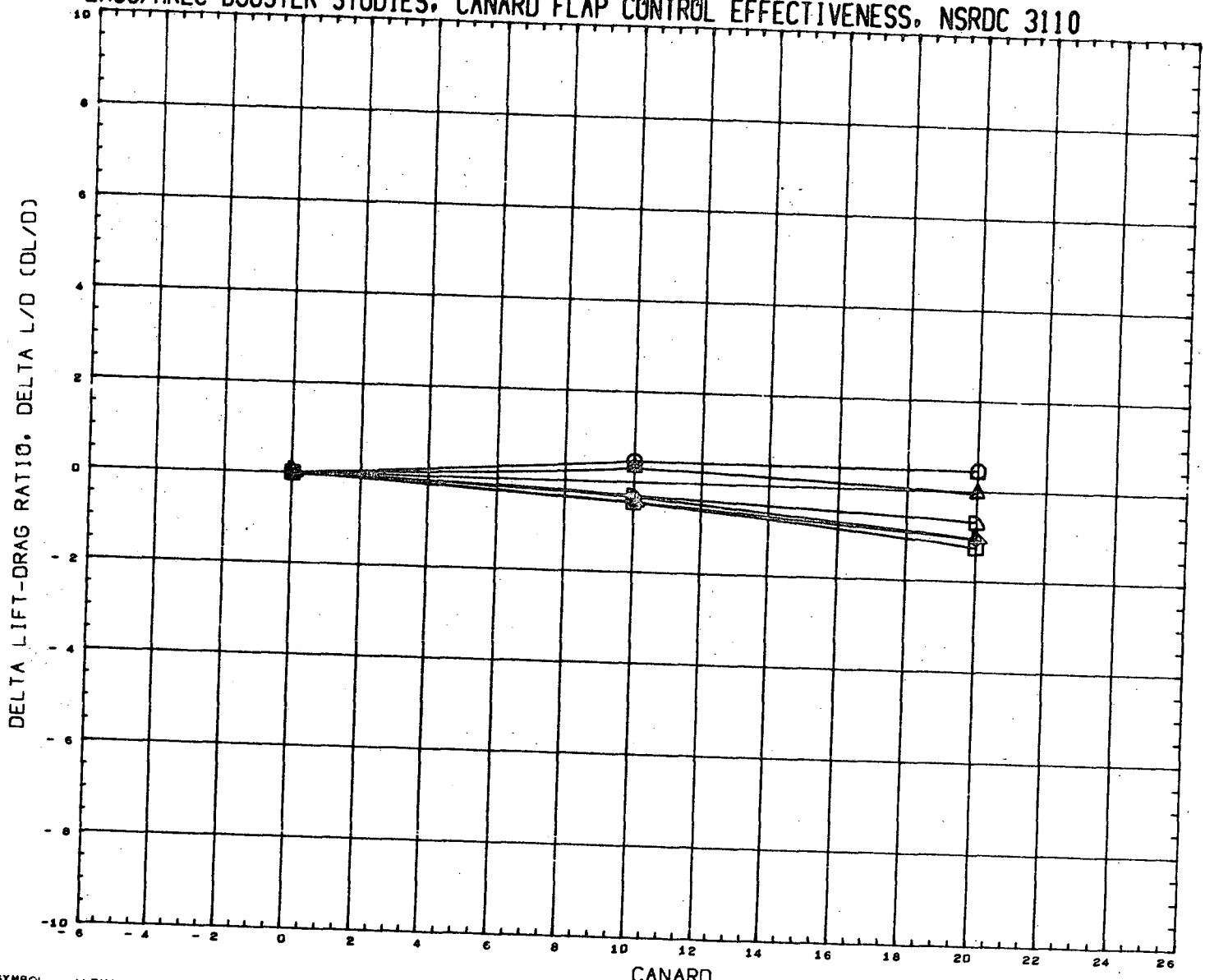
DATA SOURCE

DATASET	CANARD	DATASET	CANARD
DN2353	0.000	DN2357	10.000
DN2361	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
△	6.000
▽	8.000
⊠	10.000

MACH	0.380	BETA	0.000	DATASET	CANARD
INCIDC	3.000	INCIDW	0.000	DN2353	0.000
DIHDRL	7.660	AILRON	0.000	DN2361	20.000
ELEVTR	10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE		I+C			

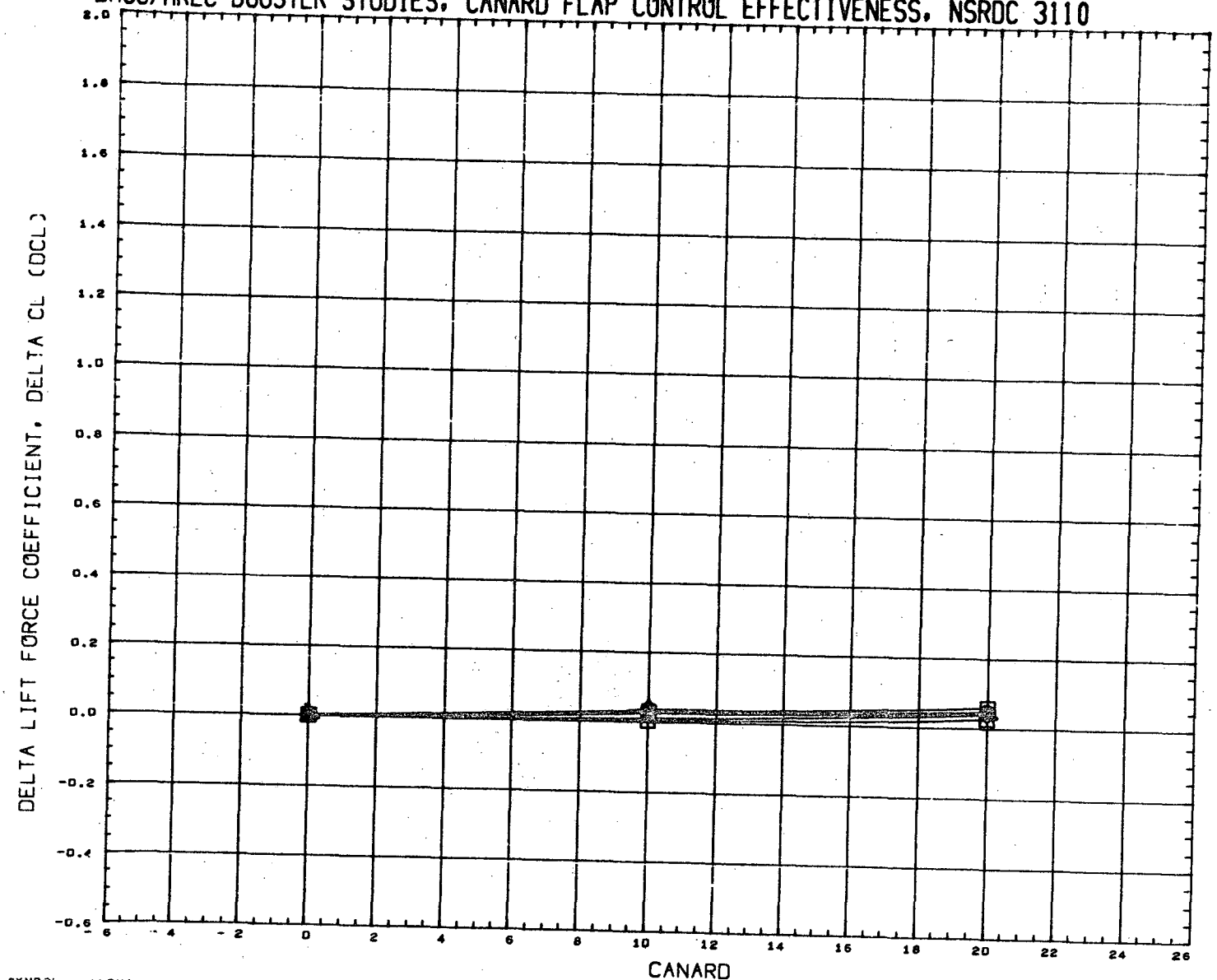
DATA SOURCE

DATASET	CANARD
DN2357	10.000

REFERENCE INFORMATION

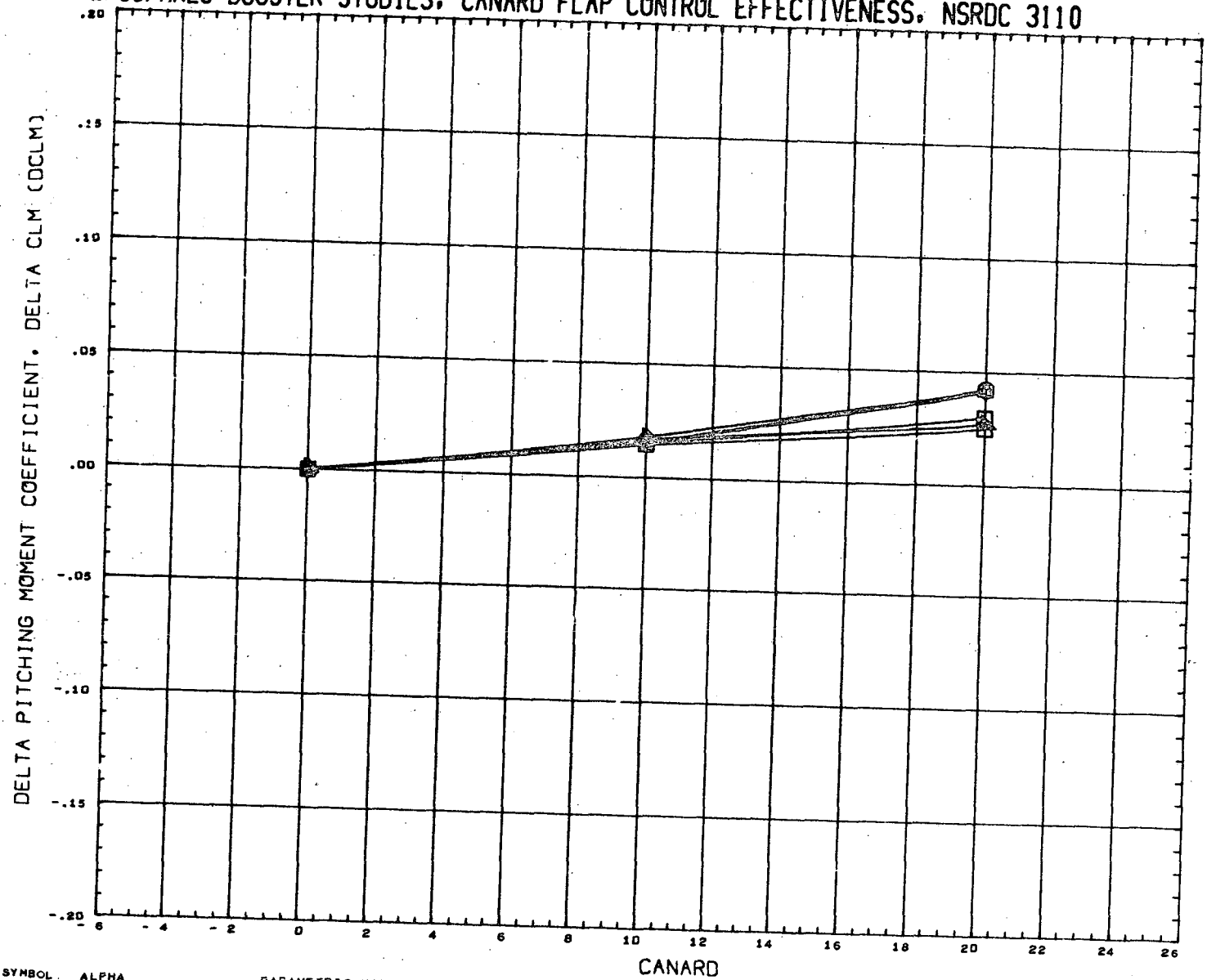
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
	- 2.000	MACH	0.380	BETA	- 0.003	DATASET	CANARD	DATASET	CANARD	SREF	1.3550	SQ.FT.
	0.000	INCIDC	3.000	INCIDW	0.000	DN2365	0.000	DN2369	10.000	LREF	41.4360	INCHES
	4.000	DIHDRL	7.660	AILRON	0.000	DN2373	20.000			BREF	41.4360	INCHES
	6.000	ELEVTR	20.000	RUDDER	0.000					XMRP	31.1400	INCHES
	8.000	WNGPOS	1.000	CNDPOS	1.000					YMRP	0.0000	INCHES
	10.000	DATA HIST. CODE		I#C						ZMRP	0.2250	INCHES
										SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	- 2.000
◻	0.000
◇	4.000
△	6.000
○	8.000
◻	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.003	DATASET	CANARD
INCIDC	3.000	INCIDW	0.000	DN2365	0.000
DIHDRL	7.660	AILRON	0.000	DN2373	20.000
ELEVTR	20.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE		I*C			

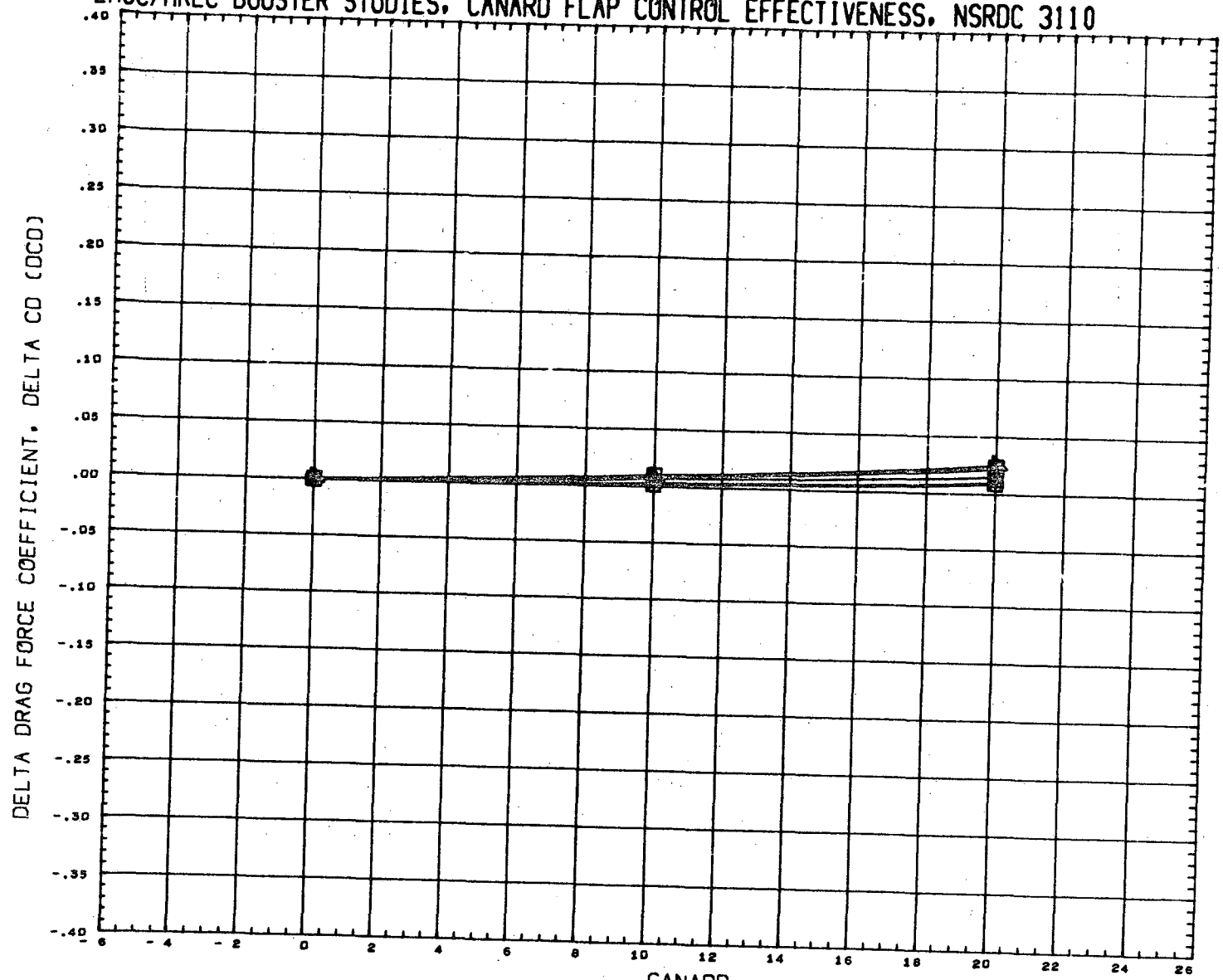
DATA SOURCE

DATASET	CANARD
DN2369	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
△	0.000
□	4.000
◇	6.000
▽	8.000
O	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.003	
INCIDC	3.000	INCIDW	0.000	
DIHDRL	7.660	AILRON	0.000	
ELEVTR	20.000	RUDDER	0.000	
WNGPOS	1.000	CNDPOS	1.000	
DATA HIST. CODE	I*C			

DATA SOURCE

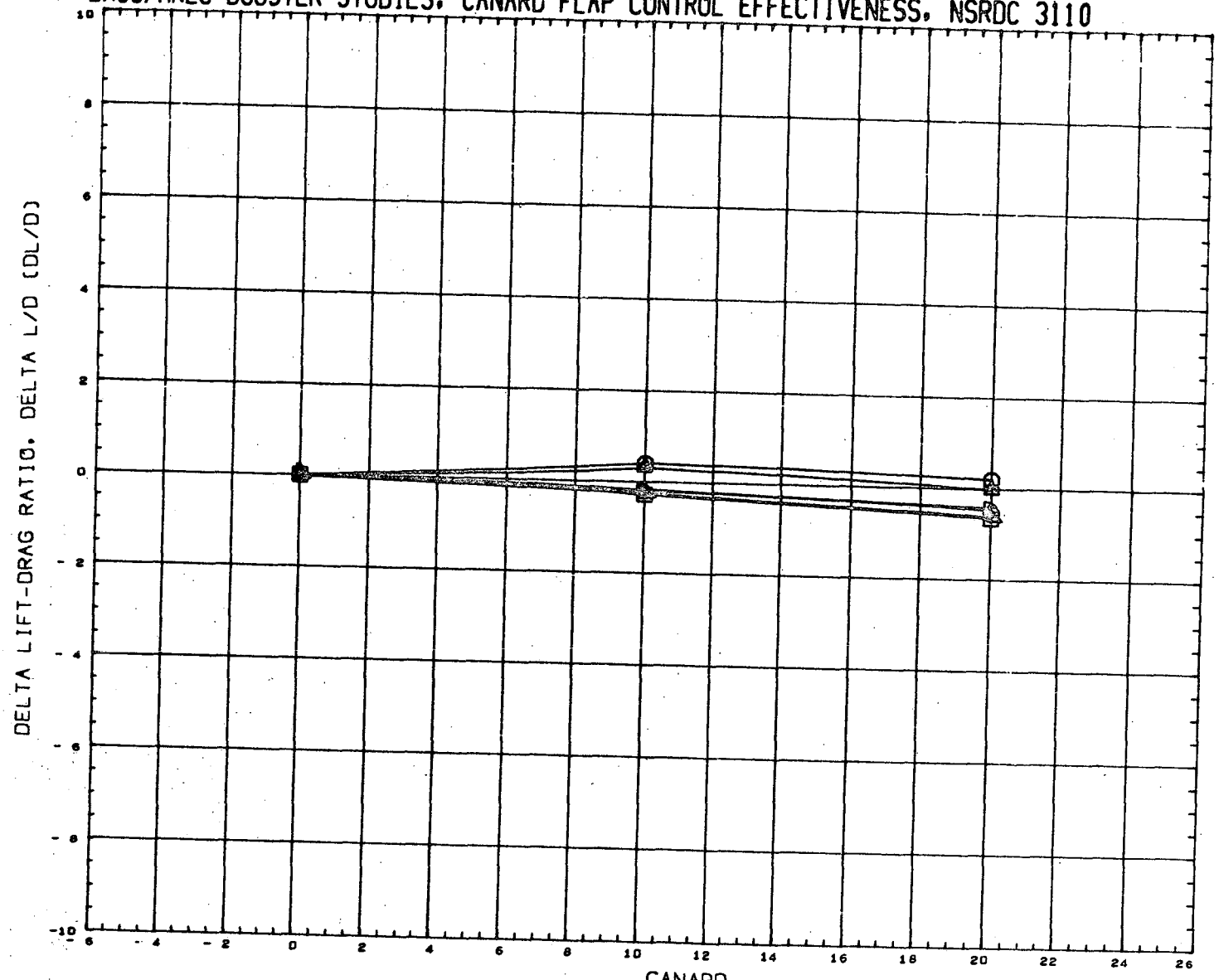
DATASET	CANARD	DATASET	CANARD
DN2365	0.000	DN2369	10.000
DN2373	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2365) 17 SEP 71 PAGE 2121

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
□	0.000
△	4.000
◇	6.000
▽	8.000
⊲	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.003		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.000	AILRON	0.000		
ELEVTR	20.000	RUDDFR	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE		I*C			

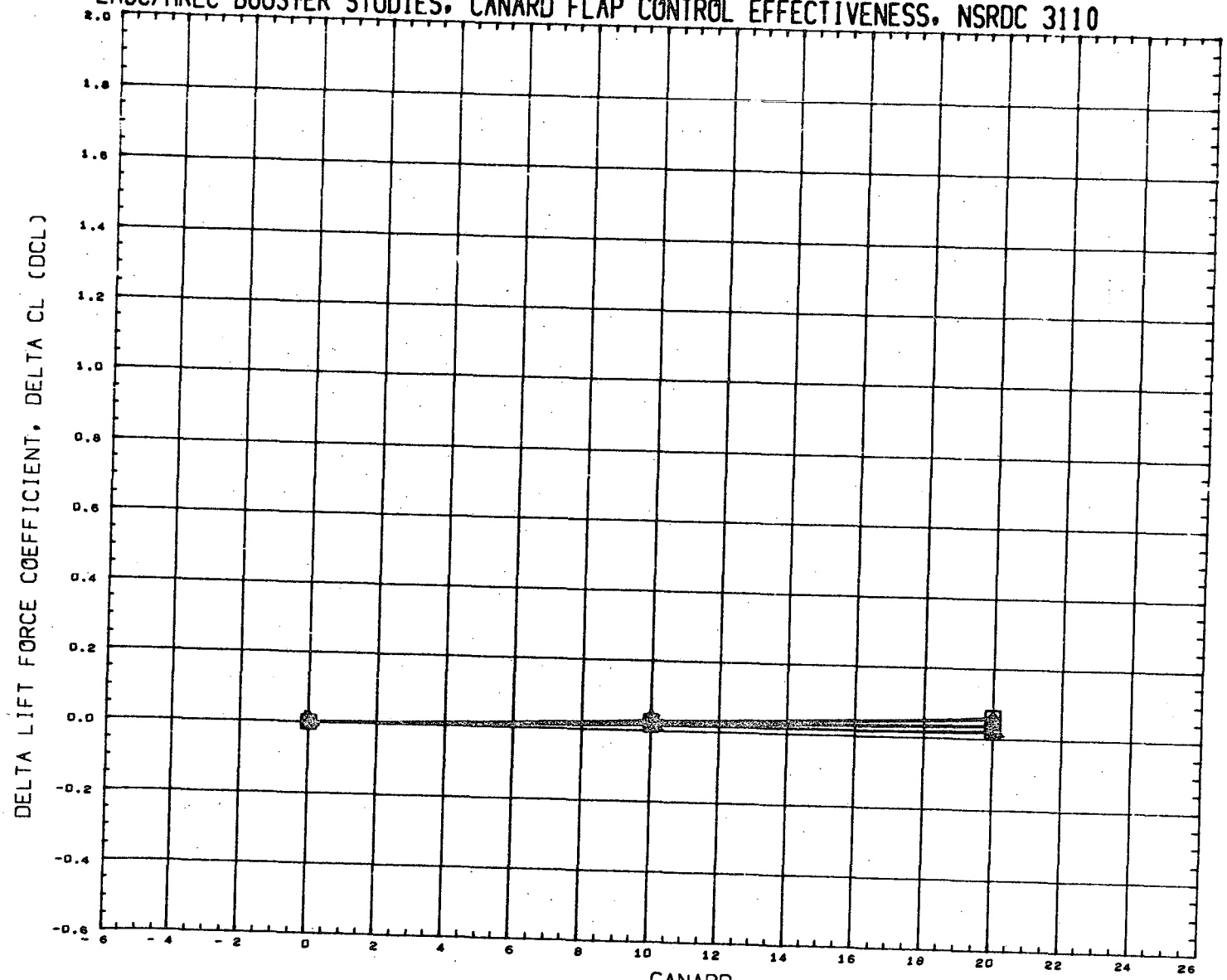
DATA SOURCE

DATASET	CANARD	DATASET	CANARD
DN2365	0.000	DN2369	10.000
DN2373	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, CANARD FLAP CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	- 2.000
◪	0.000
□	4.000
◇	6.000
▷	8.000
⬡	10.000

PARAMETRIC VALUES

MACH	0.360	BETA	- 0.004	
INCIDC	3.000	INCIDW	0.000	
DIHDRL	7.660	AILRON	0.000	
ELEVTR	30.000	RUDDER	0.000	
WNGPOS	1.000	CNDPOS	1.000	
DATA HIST. CODE		I*C		

DATA SOURCE

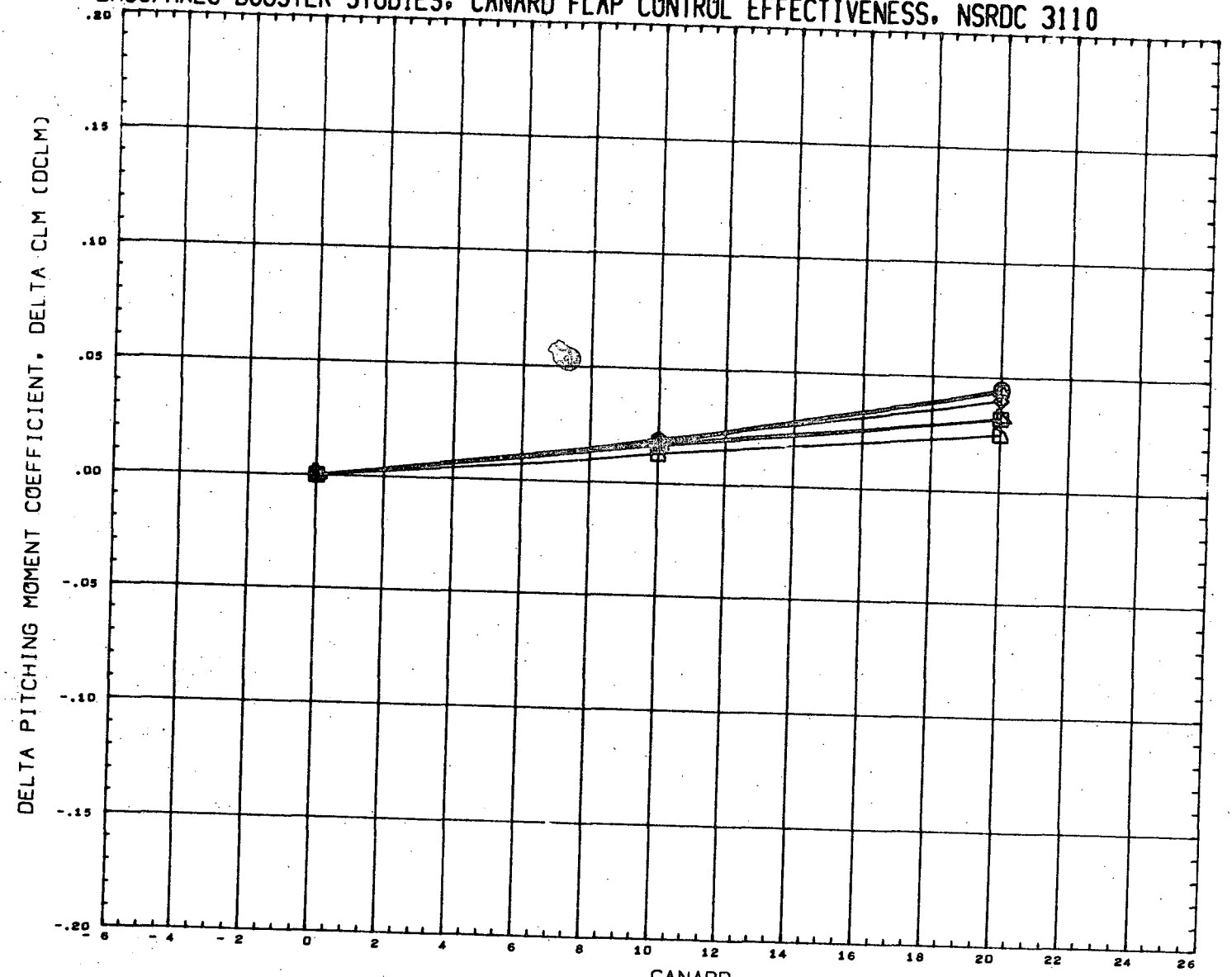
DATASET	CANARD	DATASET	CANARD
DN2377	0.000	DN2381	10.000
DN2385	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2377) 17 SEP 71 PAGE 2123

LMSC/HREC BOOSTER STUDIES. CANARD FLAP CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
▽	0.000
□	4.000
◇	6.000
▷	8.000
○	10.000

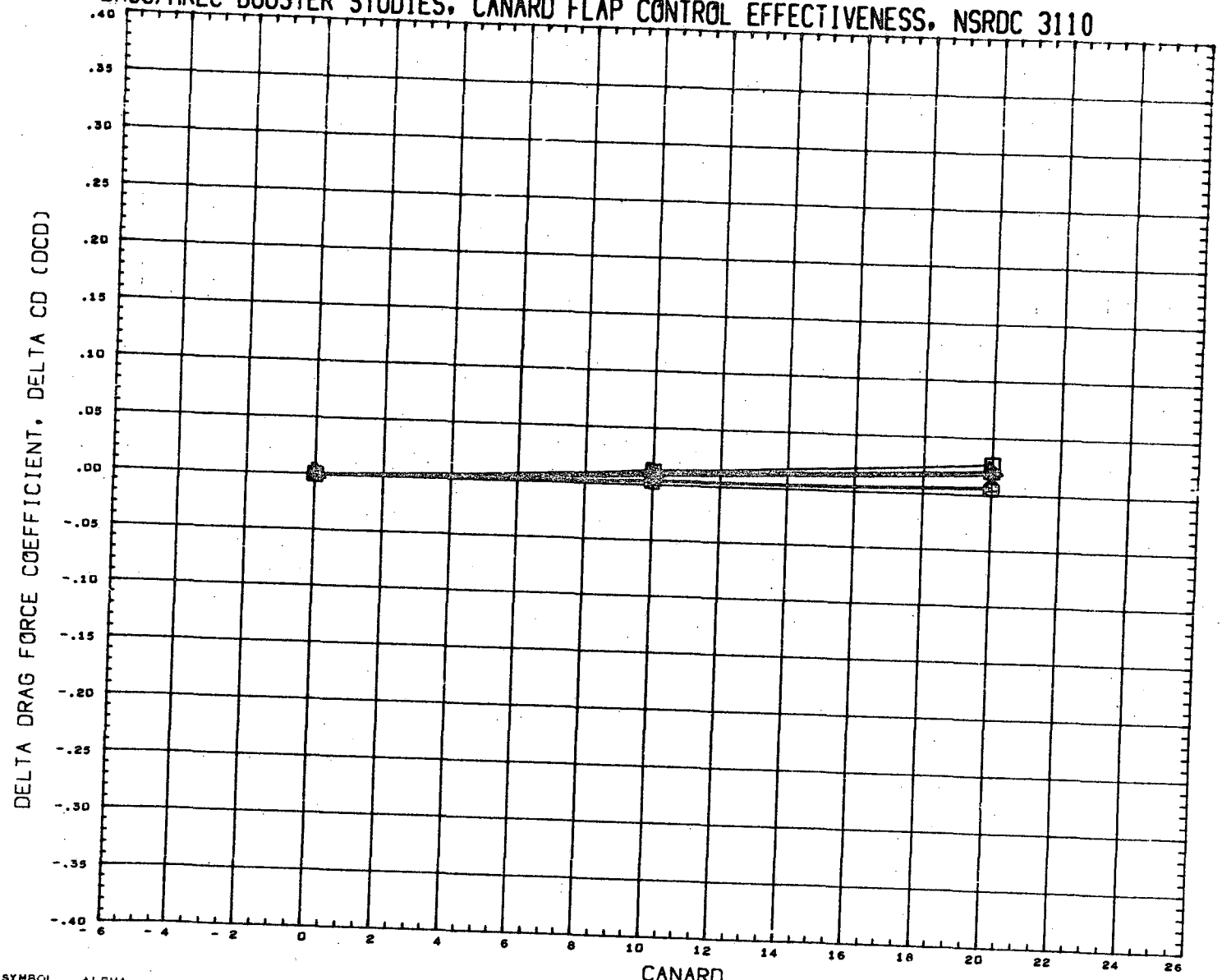
	PARAMETRIC VALUES		
MACH	0.380	BETA	-0.004
INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
ELEVTR	30.000	RUDDER	0.000
WNGPOS	1.000	CNDPOS	1.000
DATA HIST. CODE	I*C		

DATA SOURCE					
DATASET	CANARD	DATASET	CANARD	DATASET	CANARD
DN2377	0.000	DN2381	10.000		
DN2385	20.000				

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110. MSFC/LMSC BOOSTER B1C2F1W1V1 (DN2377) 17 SEP 71 PAGE 2124

LMSC/HREC BOOSTER STUDIES, CANARD FLAP CONTROL EFFECTIVENESS, NSRDC 3110



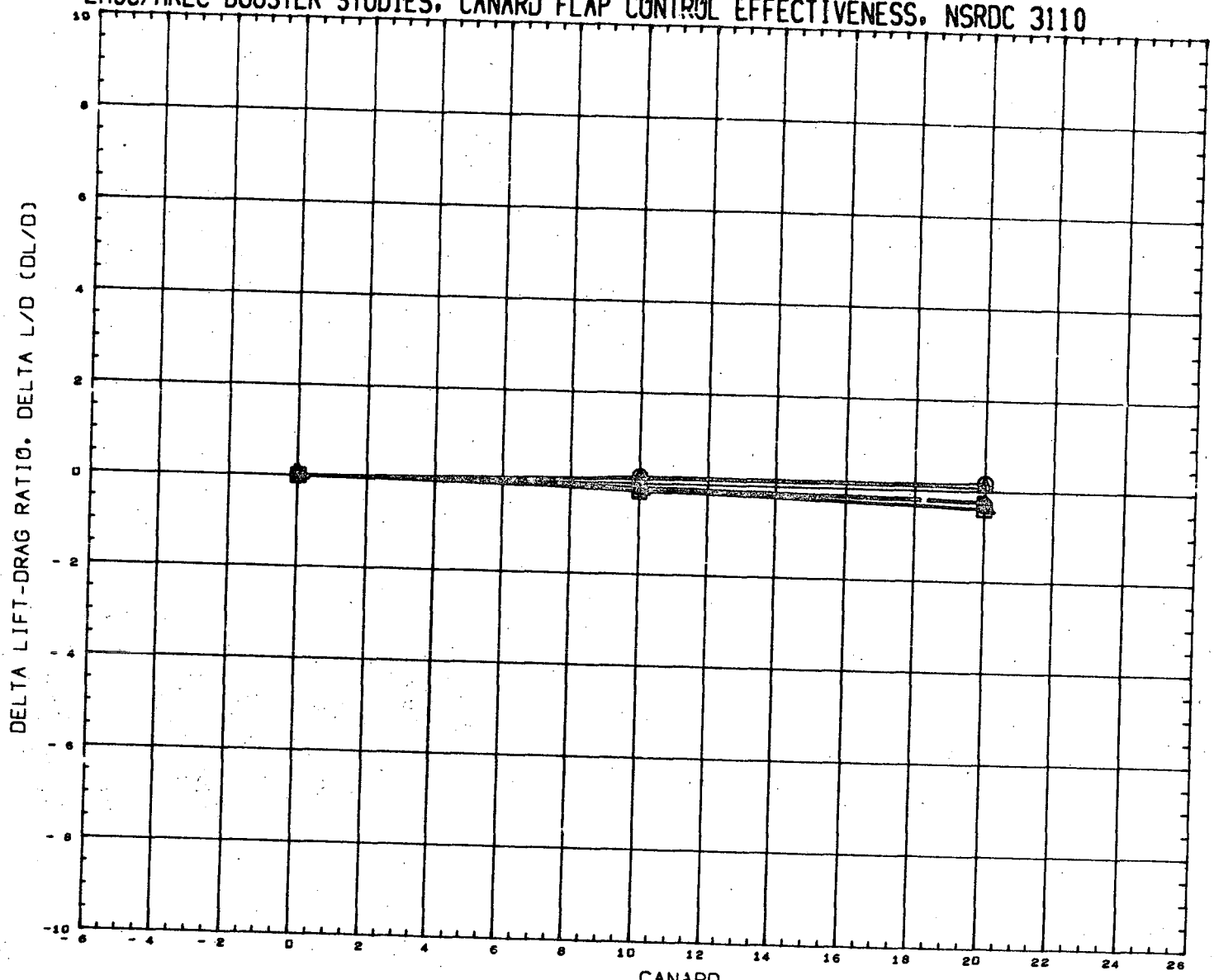
SYMBOL	ALPHA
D	-2.000
▽	0.000
□	4.000
◇	6.000
△	8.000
○	10.000

	PARAMETRIC VALUES				
MACH	0.360	BETA	-	0.004	
INCIDC	3.000	INCIDW		0.000	
DIHDRL	7.660	AILRON		0.000	
ELEVTR	30.000	RUDDER		0.000	
WNGPOS	1.000	CNDPOS		1.000	
DATA HIST. CODE	I*C				

DATA SOURCE			
DATASET	CANARD	DATASET	CANARD
DN2377	0.000	DN2381	10.000
DN2385	20.000		

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, CANARD FLAP CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
○	-2.000
□	0.000
◇	4.000
△	6.000
▽	8.000
⬠	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	0.004		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	AILRON	0.000		
ELEVTR	30.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

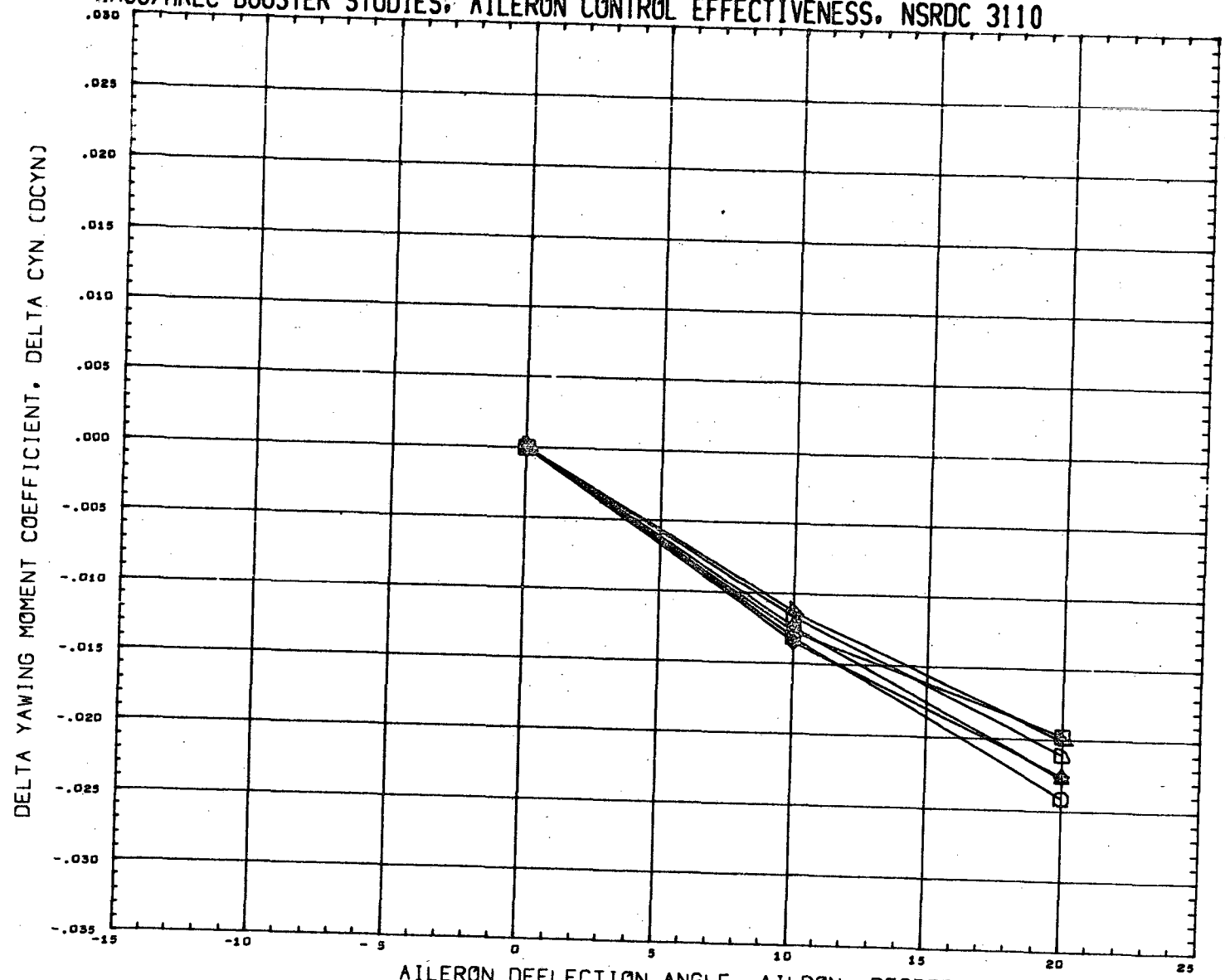
DATA SOURCE

DATASET	CANARD	DATASET	CANARD
DN2377	0.000	DN2381	10.000
DN2385	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
◸	6.000
△	8.000
○	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-	0.019
INCIDC	3.000	INCIDW		0.000
DIHDRL	7.660	CANARD		0.000
ELEVTR	0.000	RUDDER		0.000
WNGPOS	1.000	CNDPOS		1.000
DATA HIST. CODE	I*C			

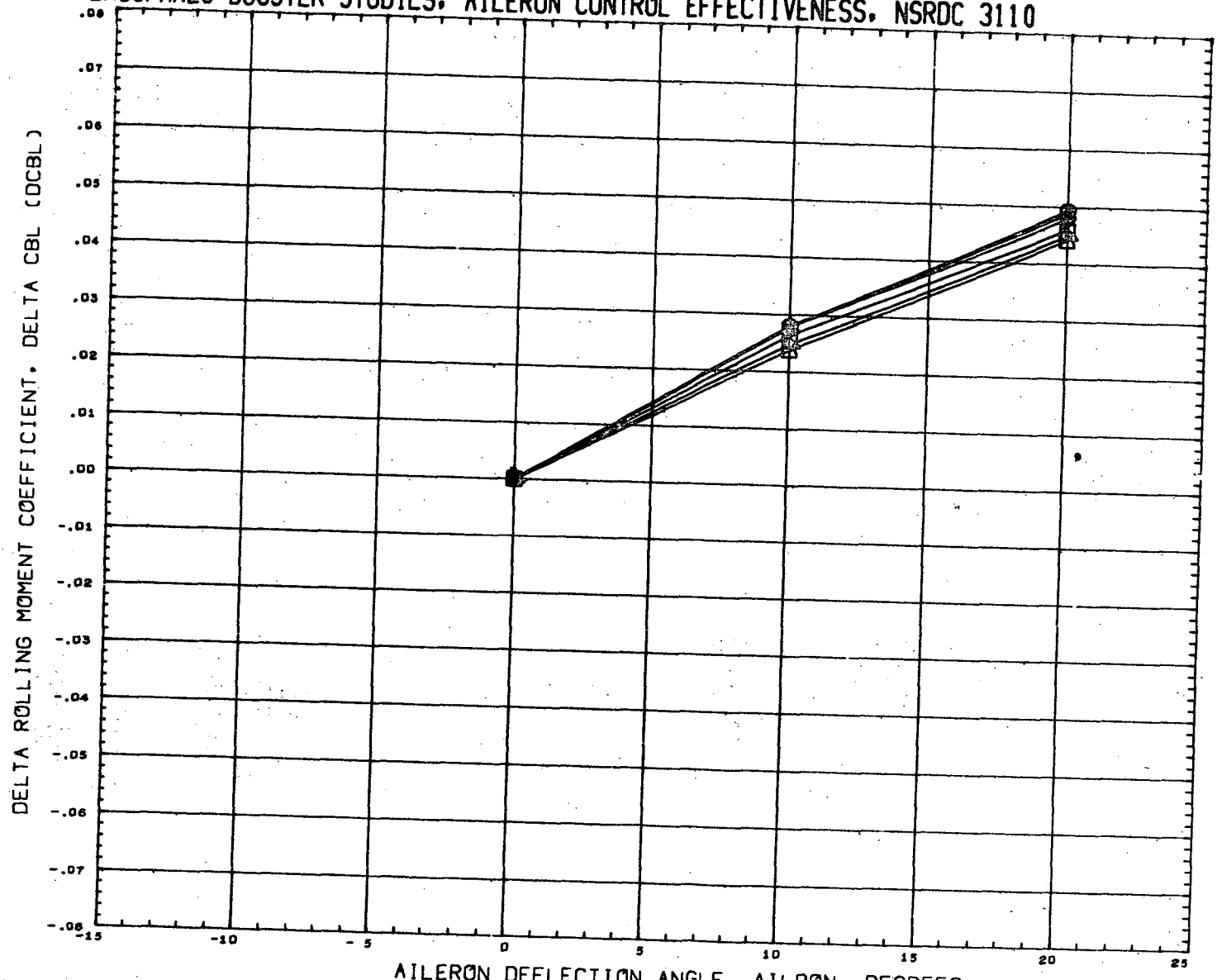
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2001	0.000	EN2389	10.000
EN2393	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

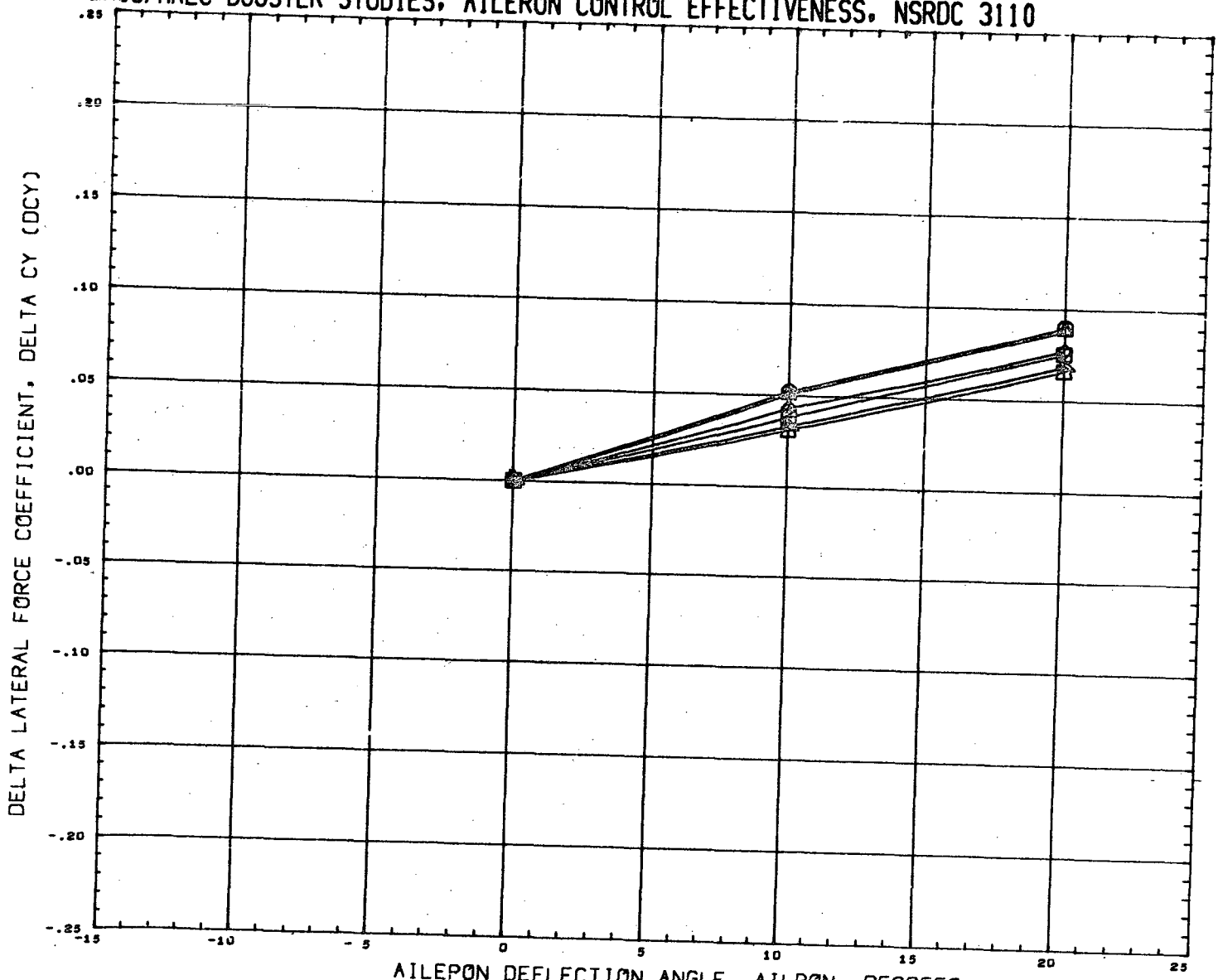
LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
△	6.000
O	8.000
	10.000

	PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
MACH	0.380	BETA	-0.019	DATASET	AILRON	DATASET	AILRON	SREF	1.3550	SQ.FT.
INCIDC	3.000	INCIDW	0.000	EN2001	0.000	EN2389	10.000	LREF	41.4360	INCHES
DIHDRL	7.660	CANARD	0.000	EN2393	20.000			BREF	41.4360	INCHES
ELEVTR	0.000	RUDDER	0.000					XMRP	31.1400	INCHES
WNGPOS	1.000	CNDFOS	1.000					YMRP	0.0000	INCHES
DATA HIST. CODE		I*C						ZMRP	0.2250	INCHES
								SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
	10.000

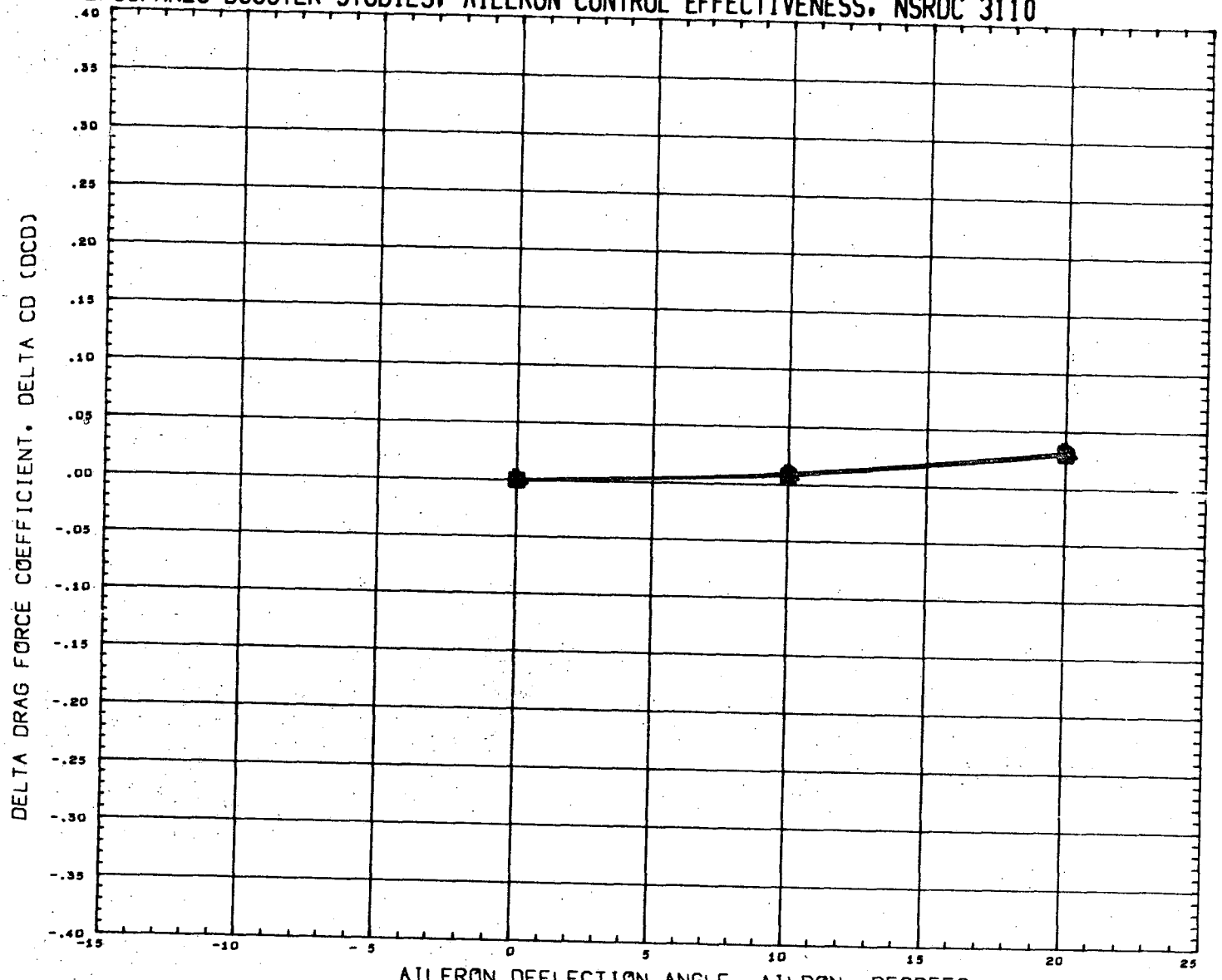
PARAMETRIC VALUES					
MACH	0.380	BETA	-0.019		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	0.000		
ELEVTR	0.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I#C				

DATA SOURCE					
DATASET	AILRON	DATASET	AILRON		
EN2001	0.000	EN2389	10.000		
EN2393	20.000				

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F1W1V1 (EN2001) 17 SEP 71 PAGE 2129

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
▽	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.019		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	0.000		
ELEVTR	0.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

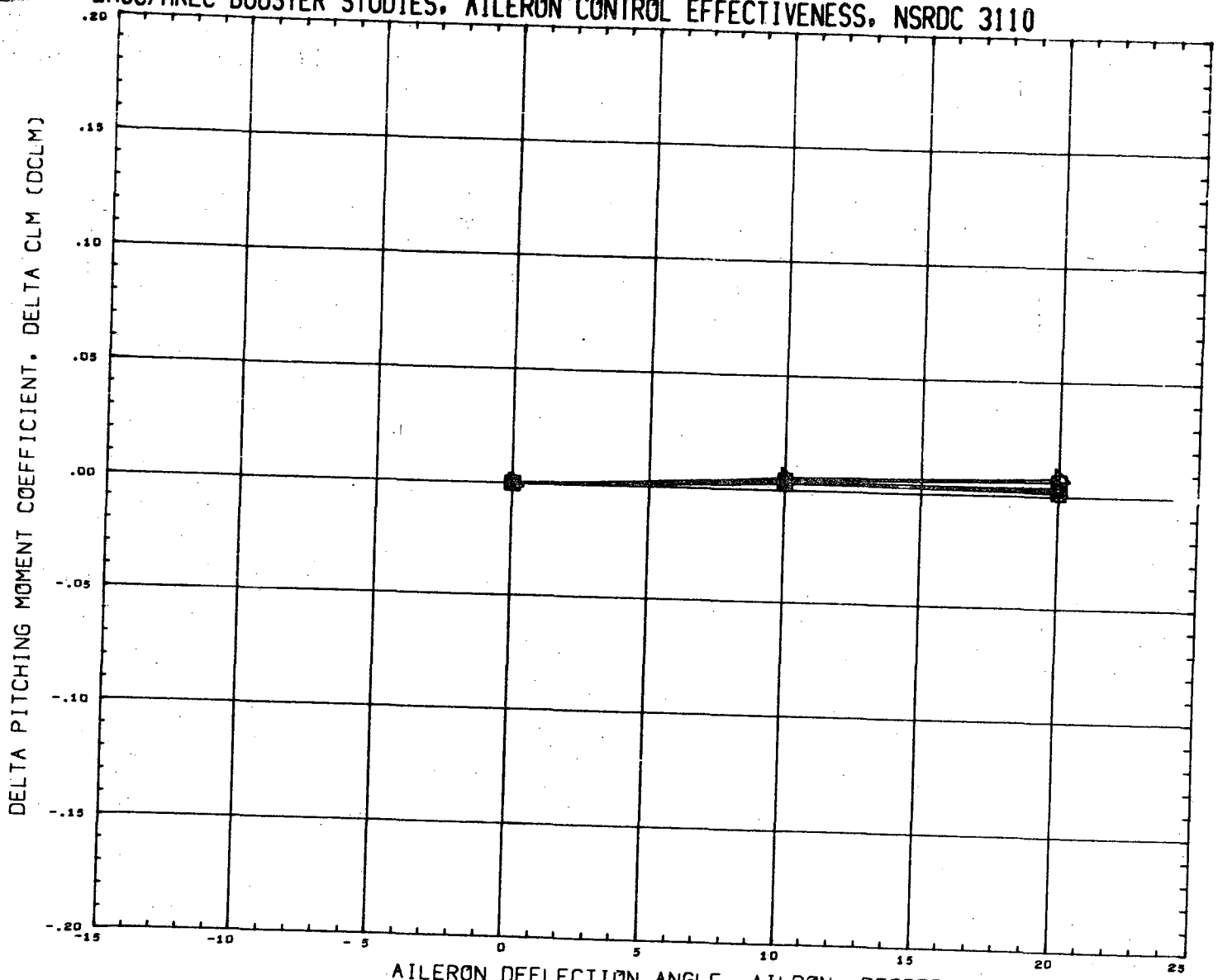
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2001	0.000	EN2389	10.000
EN2393	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
▽	- 2.000
△	0.000
◇	4.000
□	6.000
▷	8.000
○	10.000

PARAMETRIC VALUES

MACH		BETA	- 0.019
INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	CANARD	0.000
ELEVTR	0.000	RUDDER	0.000
WNGPOS	1.000	CNDPOS	1.000
DATA HIST. CODE	I*C		

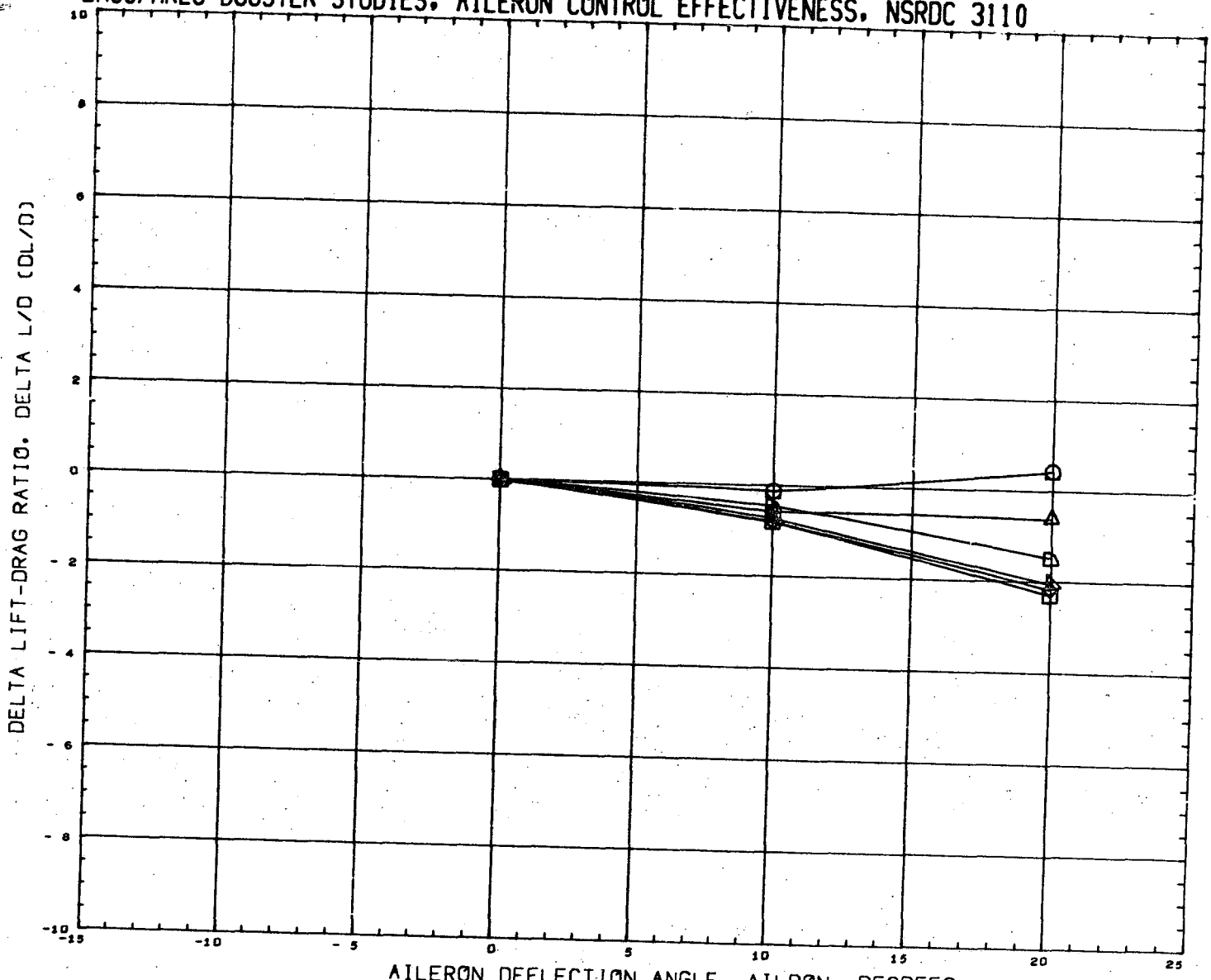
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2001	0.000	EN2389	10.000
EN2393	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
-	2.000
	0.000
	4.000
	6.000
	8.000
	10.000

MACH	0.380
INCIDC	3.000
DIHDRL	7.660
ELEVTR	0.000
WNGPOS	1.000
DATA HIST. CODE	I#C

FARAMETRIC VALUES

BETA	-	0.019	
INCIDW		0.000	
CANARD		0.000	
RUDDER		0.000	
CNDPOS		1.000	

DATA SOURCE

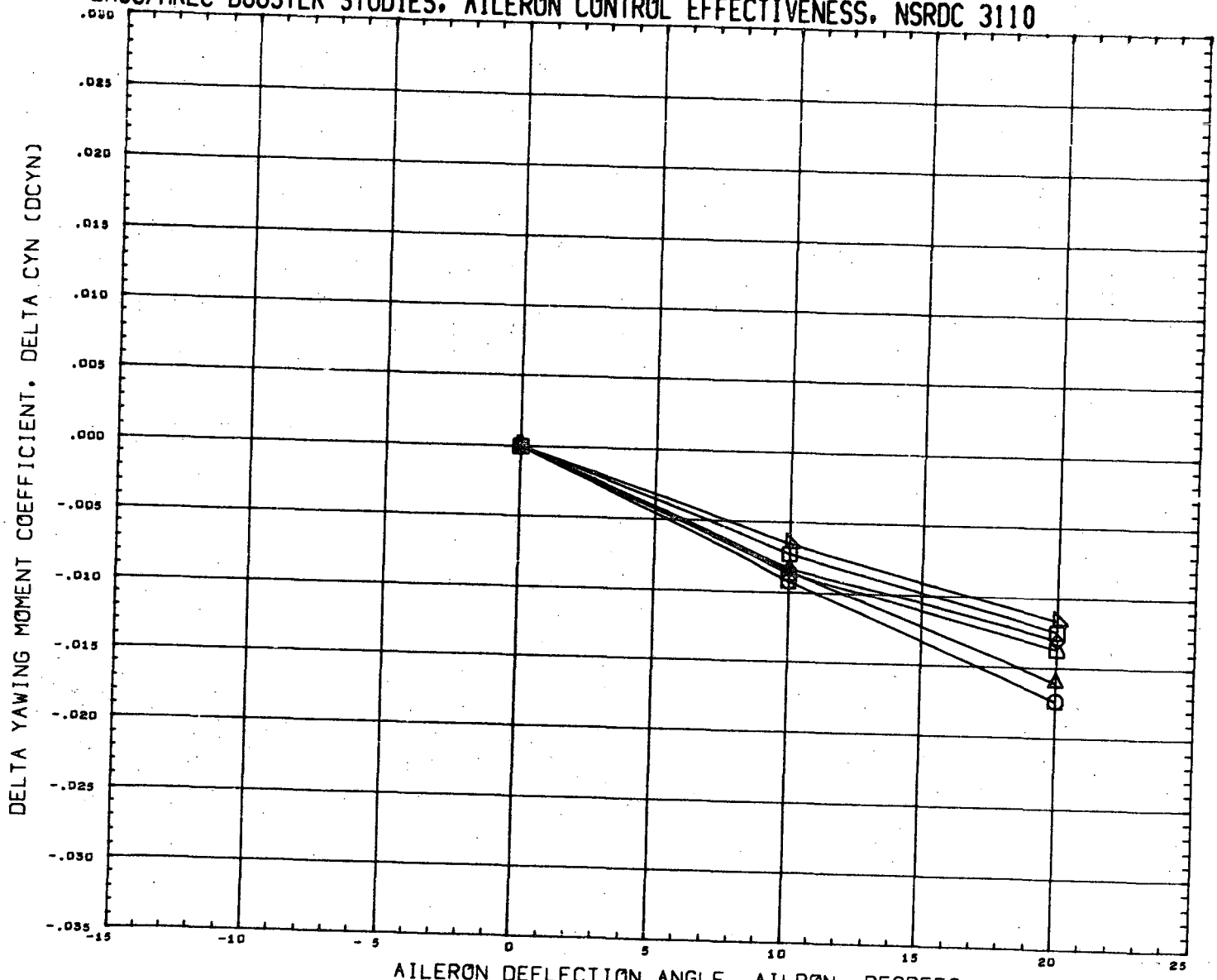
DATASET	AILRON		DATASET	AILRON
EN2001	0.000		EN2389	10.000
EN2393	20.000			

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (EN2001) 17 SEP 71 PAGE 2132

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	-2.000
◇	0.000
□	4.000
▽	6.000
◇	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.001		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	0.000		
ELEVTR	-10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	1#C				

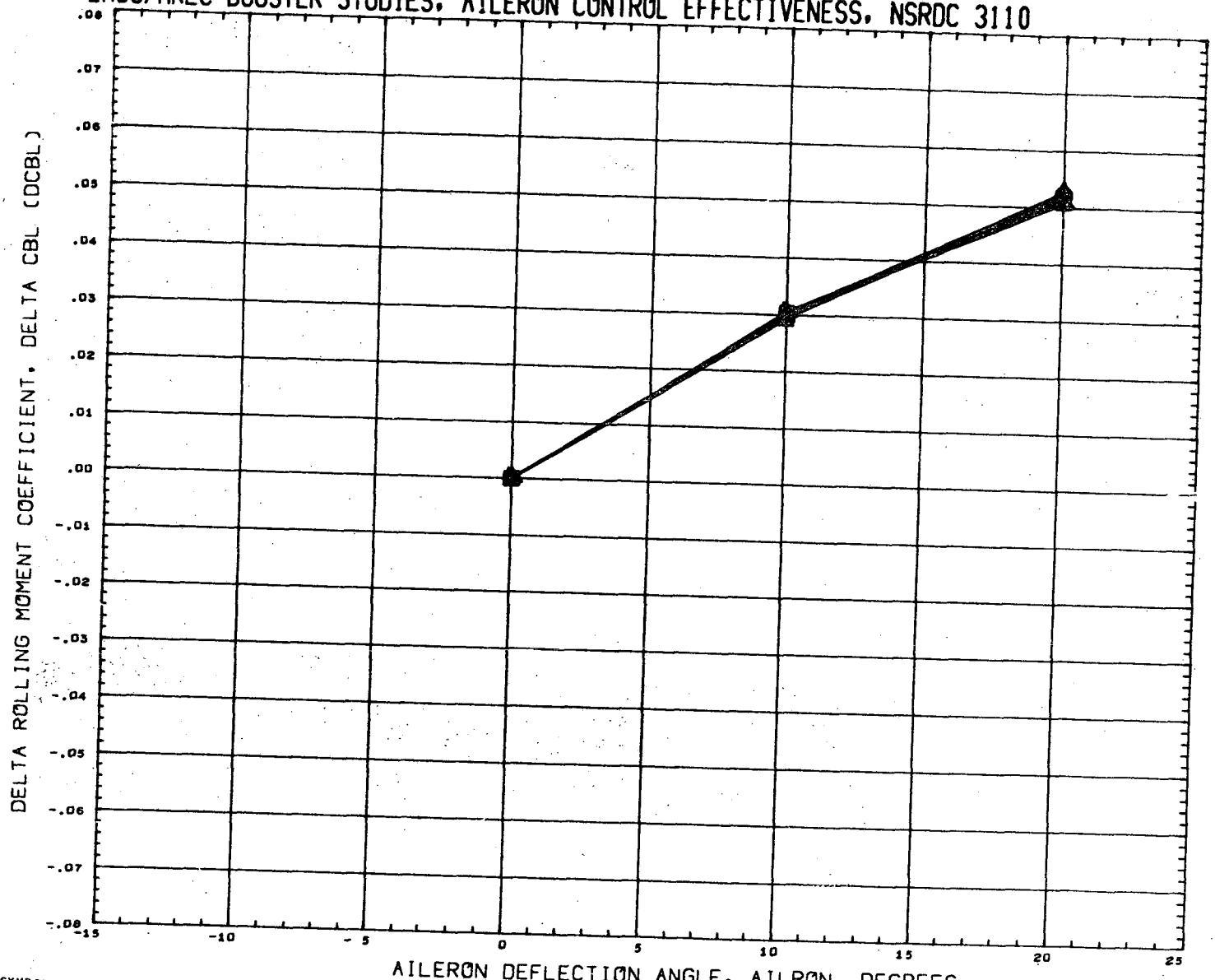
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2341	0.000	EN2397	10.000
EN2401	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRF	31.1400	INCHES
YMRF	0.0000	INCHES
ZMRF	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
▷	6.000
○	8.000
	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.001		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	0.000		
ELEVTR	-10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE		I*C			

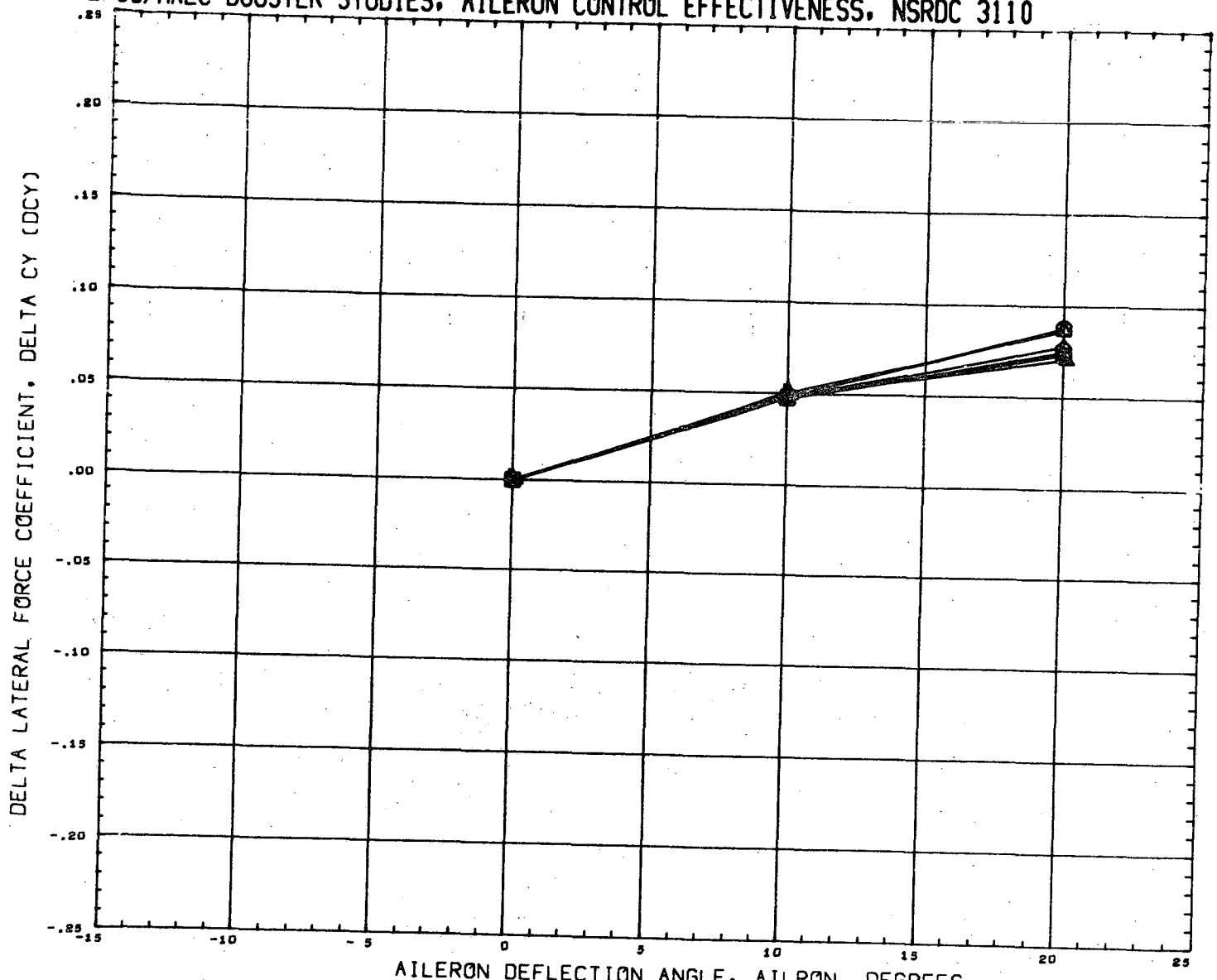
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2341	0.000	EN2397	10.000
EN2401	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	- 2.000
◇	0.000
◇	4.000
□	8.000
△	8.000
O	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.001		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	0.000		
ELEVTR	- 10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

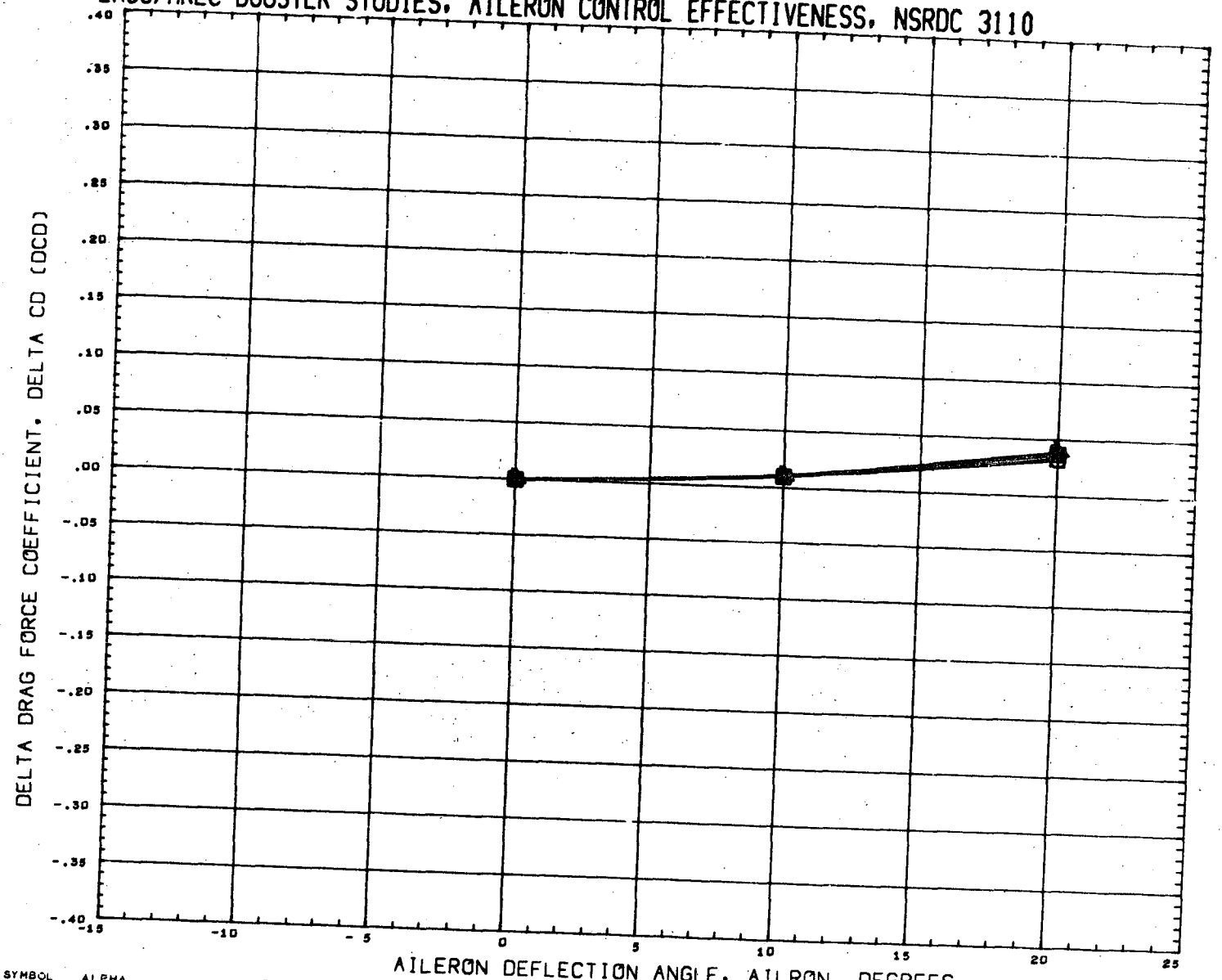
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2341	0.000	EN2397	10.000
EN2401	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
◻	0.000
◇	4.000
△	6.000
○	8.000
	10.000

PARAMETRIC VALUES

MACH	0.360	BETA	-0.001		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	0.000		
ELEVTR	-10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE		I#C			

DATA SOURCE

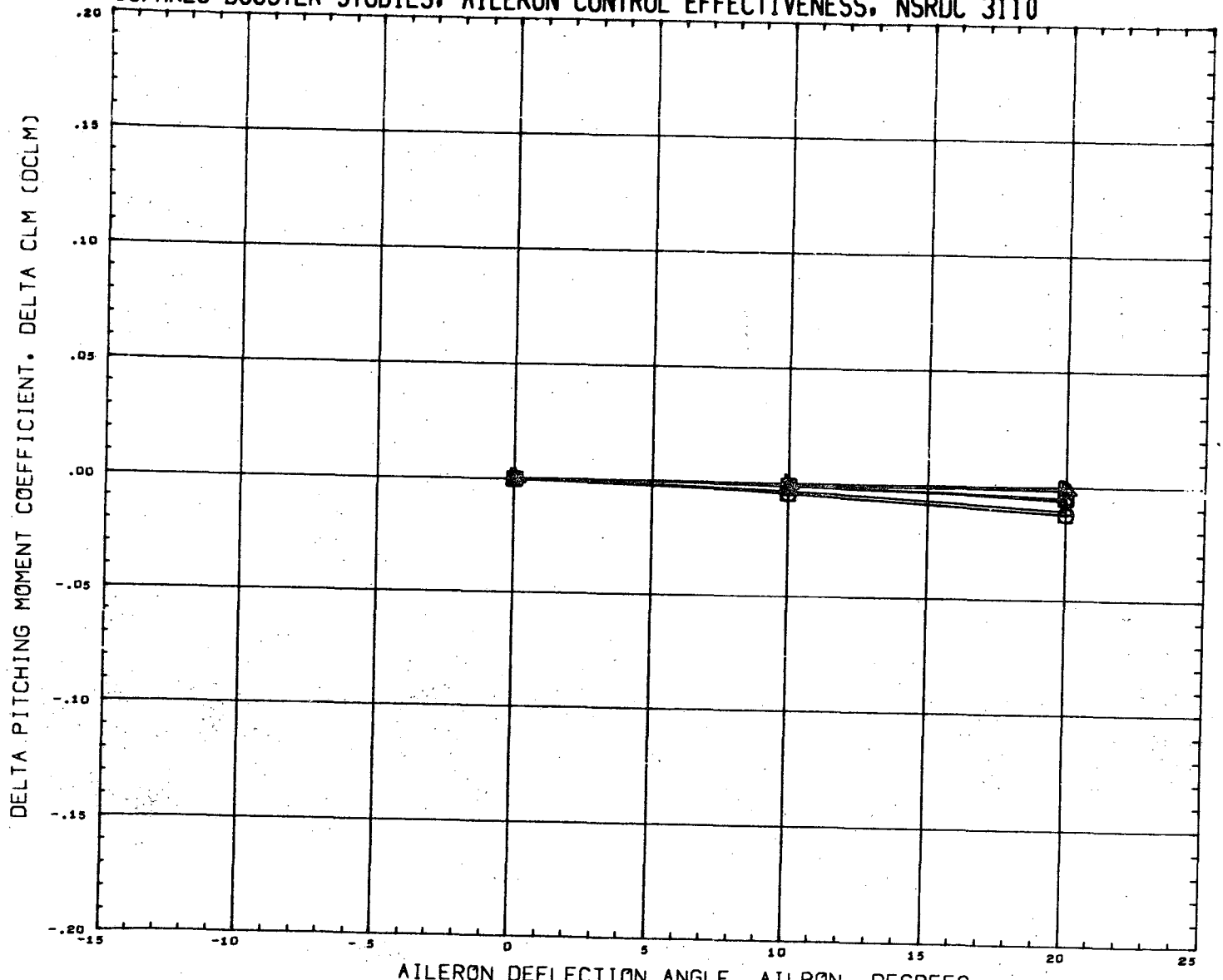
DATASET	AILRON	DATASET	AILRON
EN2341	0.000	EN2397	10.000
EN2401	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (EN2341) 17 SEP 71

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	- 2.000
□	0.000
◇	4.000
△	6.000
○	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.001		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	0.000		
ELEVTR	- 10.000	RUDDER	0.000		
WNGFOS	1.000	CNDFOS	1.000		
DATA HIST. CODE		I*C			

DATA SOURCE

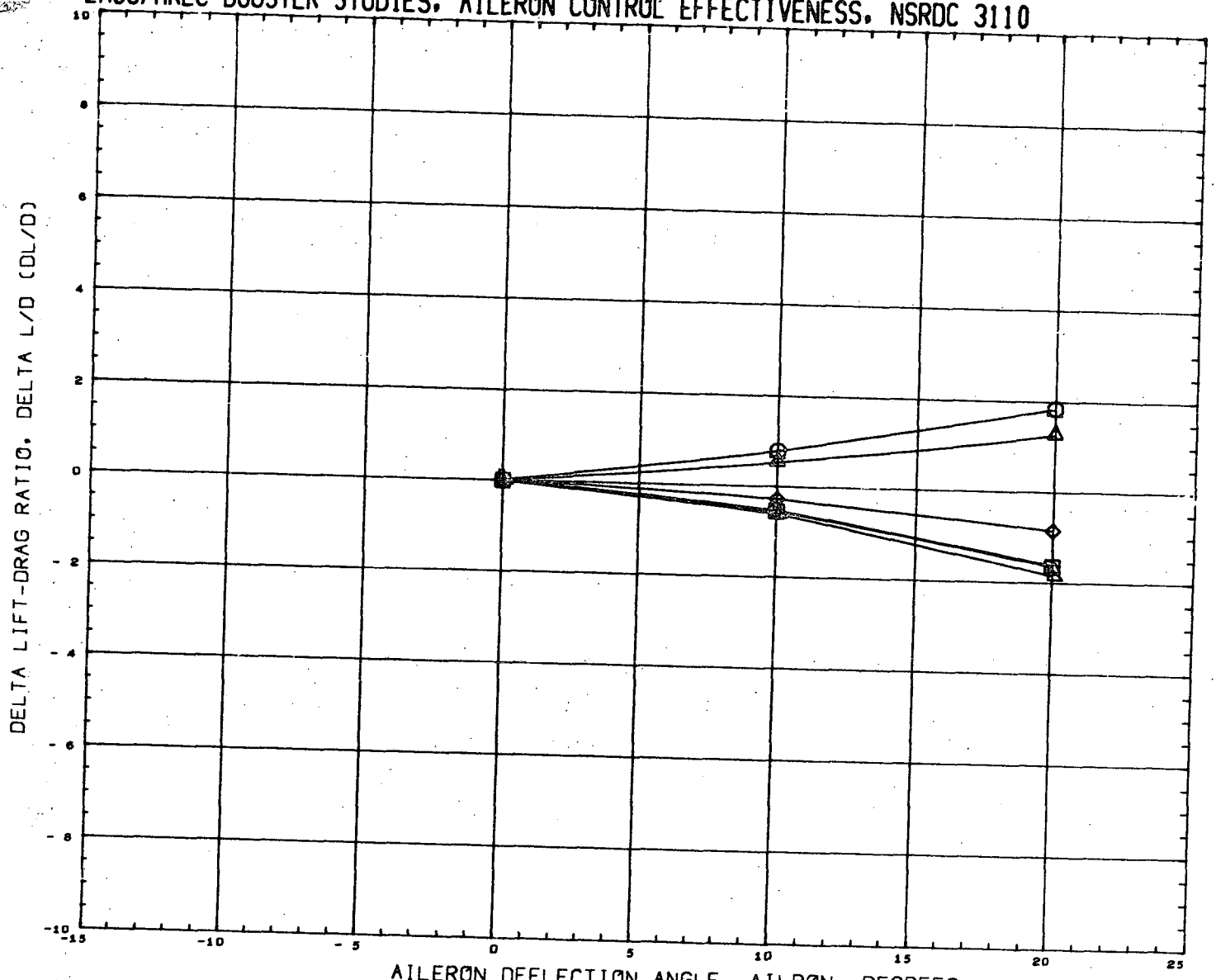
DATASET	AILRON	DATASET	AILRON
EN2341	0.000	EN2397	10.000
EN2401	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (EN2341) 17 SEP 71 PAGE 2137

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
◇	- 2.000
□	0.000
△	4.000
○	6.000
◸	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.360	BETA	- 0.001		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	0.000		
ELEVTR	- 10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

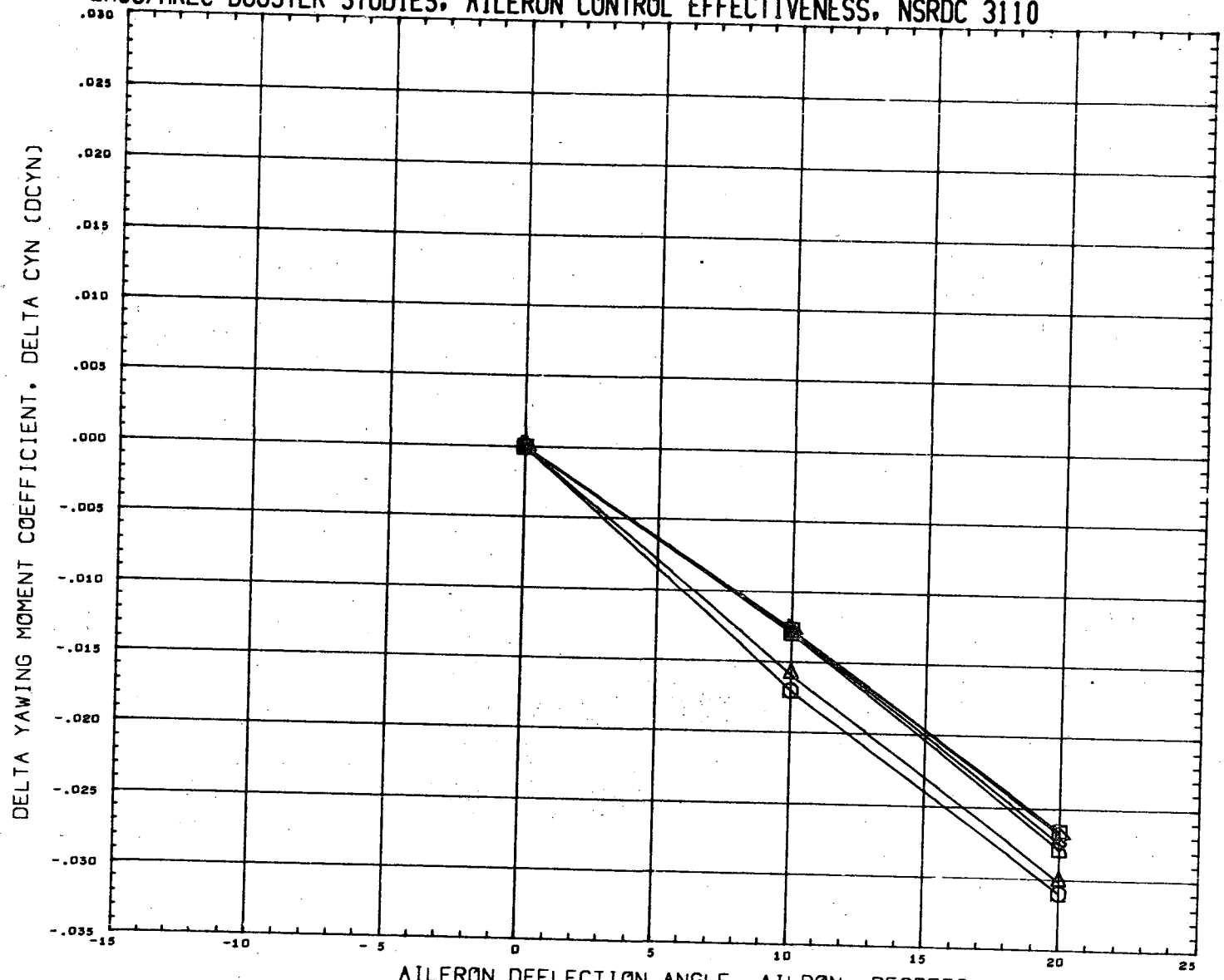
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2341	0.000	EN2397	10.000
EN2401	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



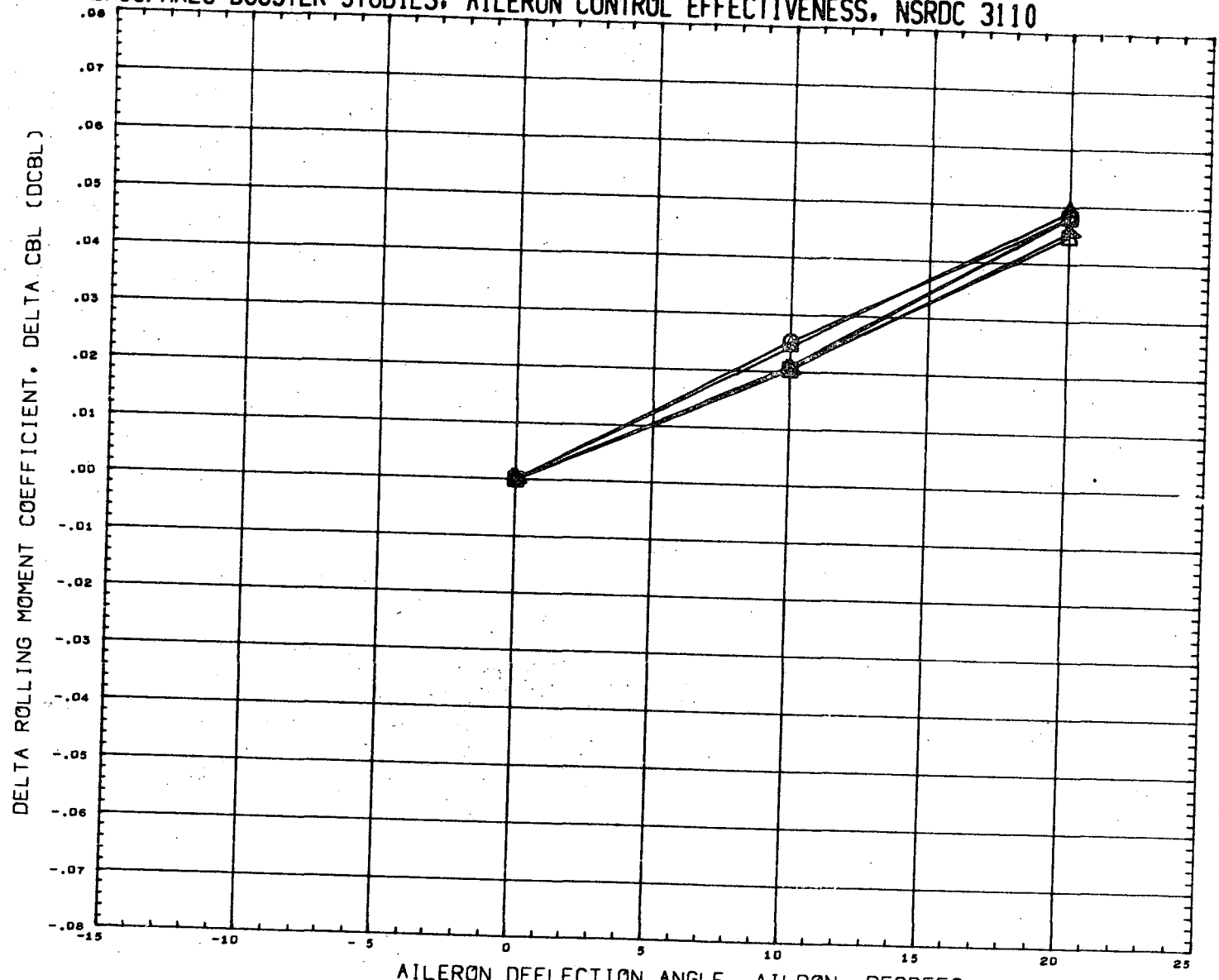
SYMBOL	ALPHA
◇	-2.000
△	0.000
○	4.000
□	6.000
◸	8.000
D	10.000

PARAMETRIC VALUES			
MACH	0.380	BETA	0.000
INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	CANARD	0.000
ELEVTR	10.000	RUDDER	0.000
WNGPOS	1.000	CNDPOS	1.000
DATA HIST. CODE	I*C		

DATA SOURCE				
DATASET	AILRON	DATASET	AILRON	
EN2353	0.000	EN2405	10.000	
EN2409	20.000			

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110. MSFC/LMSC BOOSTER B1C2F1W1V1 (EN2353) 17 SEP 71 PAGE 2139



SYMBOL	ALPHA
-	2.000
D	0.000
□	4.000
◇	6.000
△	8.000
O	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	0.000		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	0.000		
ELEVTR	10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE		I*C			

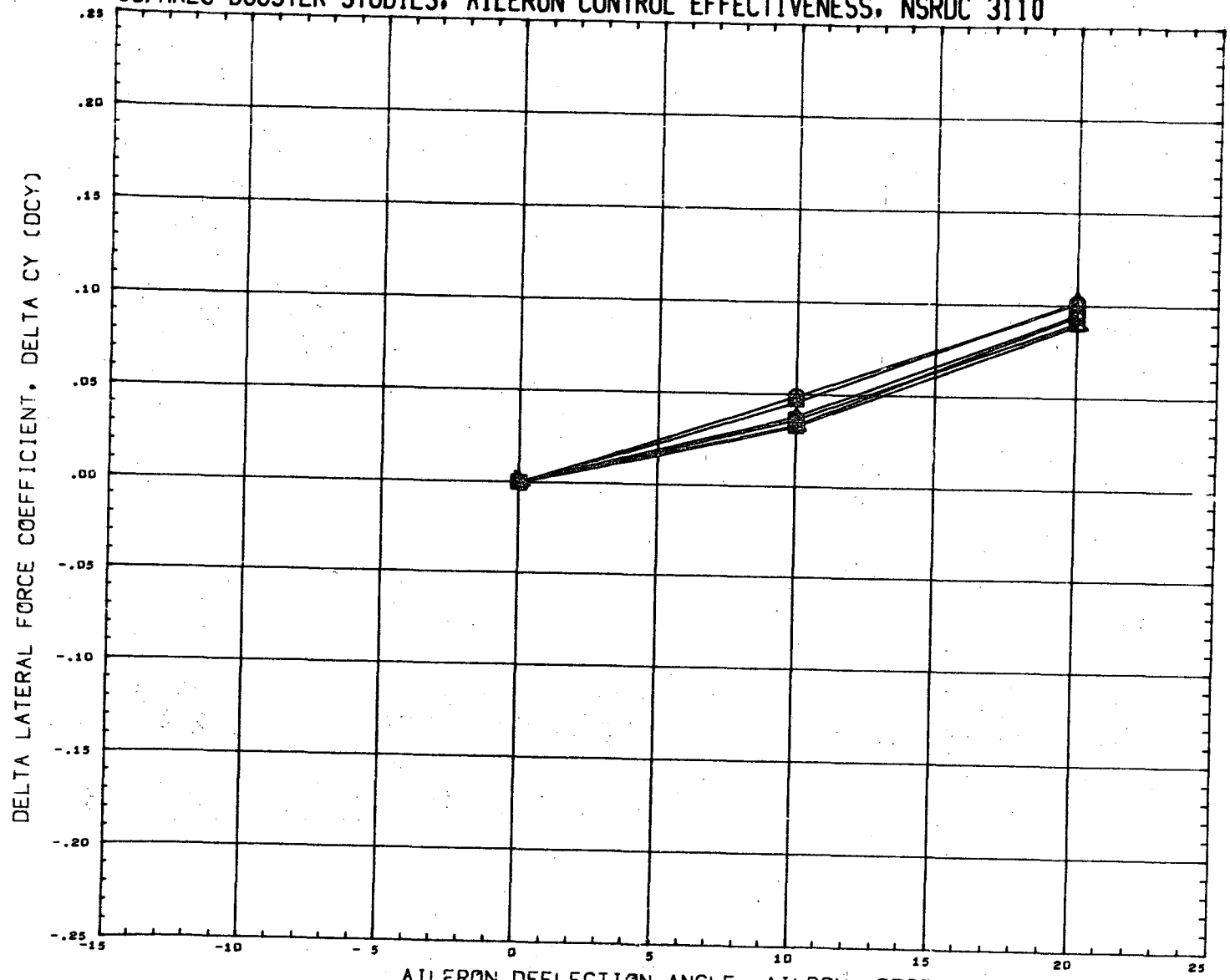
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2353	0.000	EN2405	10.000
EN2409	20.000		

REFERENCE INFORMATION

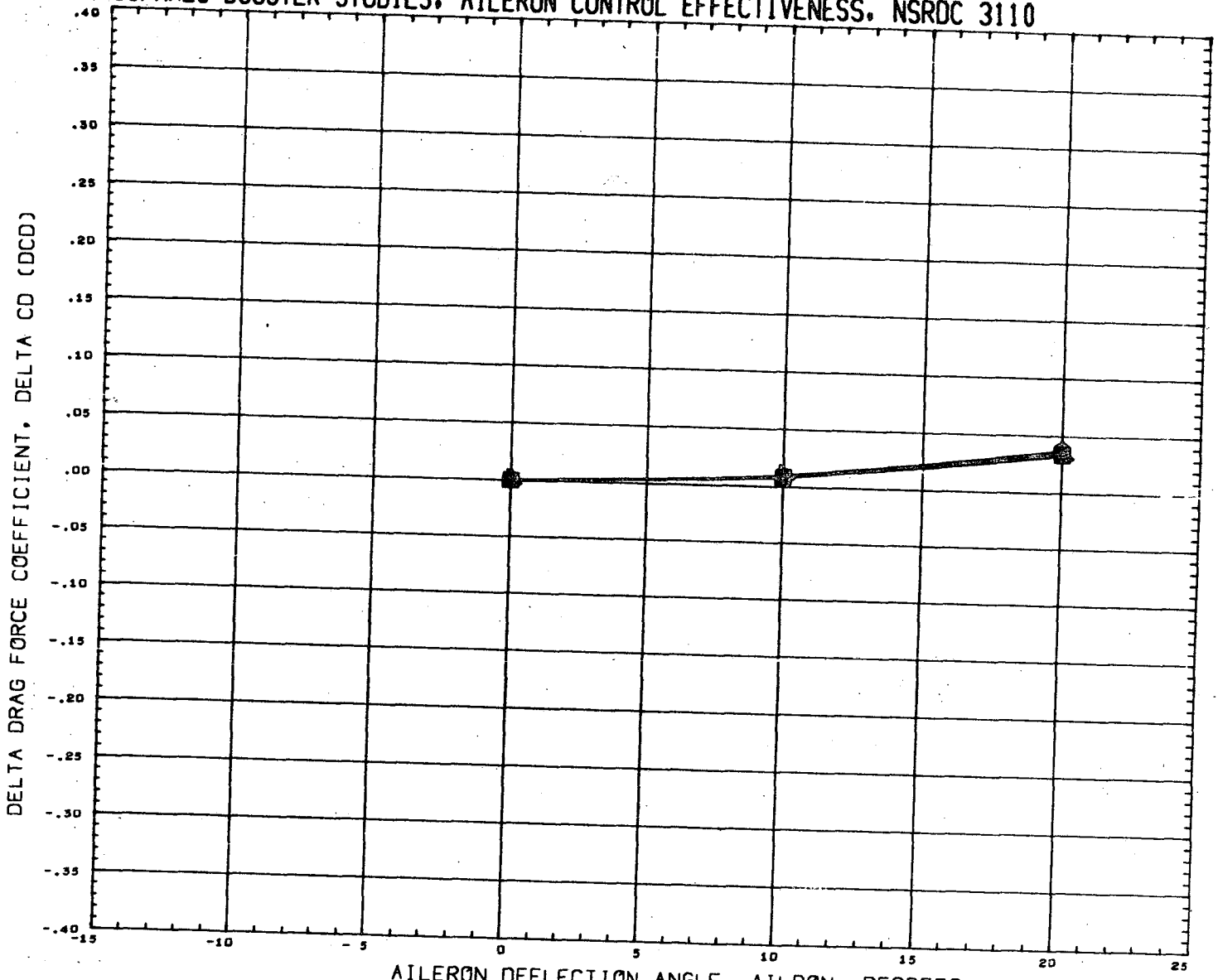
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
	- 2.000	MACH	0.380	BETA	0.000	DATASET	AILRON	DATASET	AILRON	SREF	1.3550	SQ.FT.
	0.000	INCIDC	3.000	INCIDW	0.000	EN2353	0.000	EN2405	10.000	LREF	41.4360	INCHES
	4.000	DIHDRL	7.660	CANARD	0.000	EN2409	20.000			BREF	41.4360	INCHES
	6.000	ELEVTR	10.000	RUDDER	0.000					XMRP	31.1400	INCHES
	8.000	WNGPOS	1.000	CNCPOS	1.000					YMRP	0.0000	INCHES
	10.000	DATA HIST. CODE		I*C						ZMRP	0.2250	INCHES
										SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	2.000
□	0.000
◇	4.000
▷	6.000
○	8.000
	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	0.000		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	0.000		
ELEVTR	10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE		I*C			

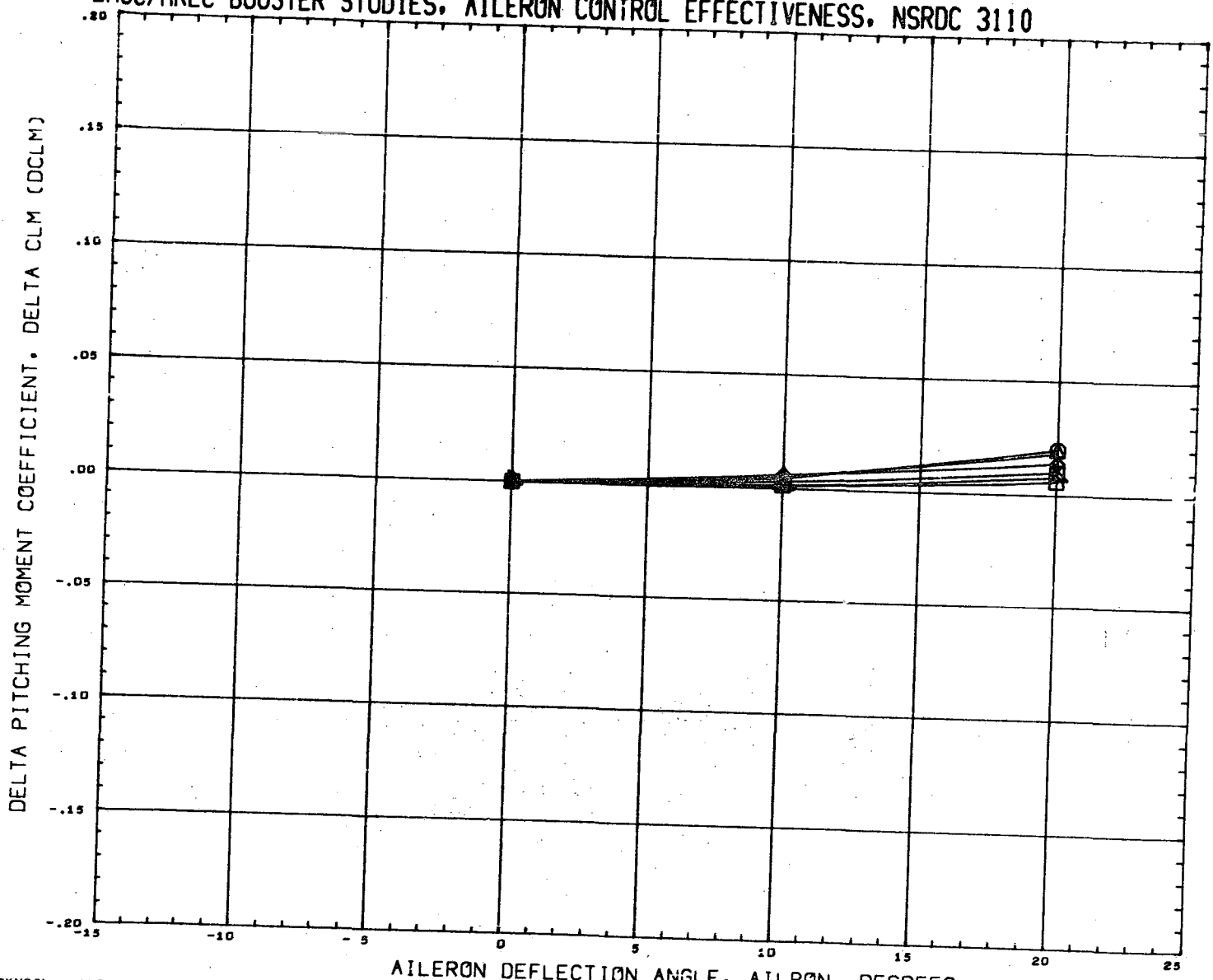
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2353	0.000	EN2405	10.000
EN2409	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
○	-2.000
△	0.000
□	4.000
◇	6.000
▽	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	0.000	DATASET	AILRON
INCIDC	3.000	INCIDW	0.000	EN2353	0.000
DIHDRL	7.660	CANARD	0.000	EN2409	20.000
ELEVTR	10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

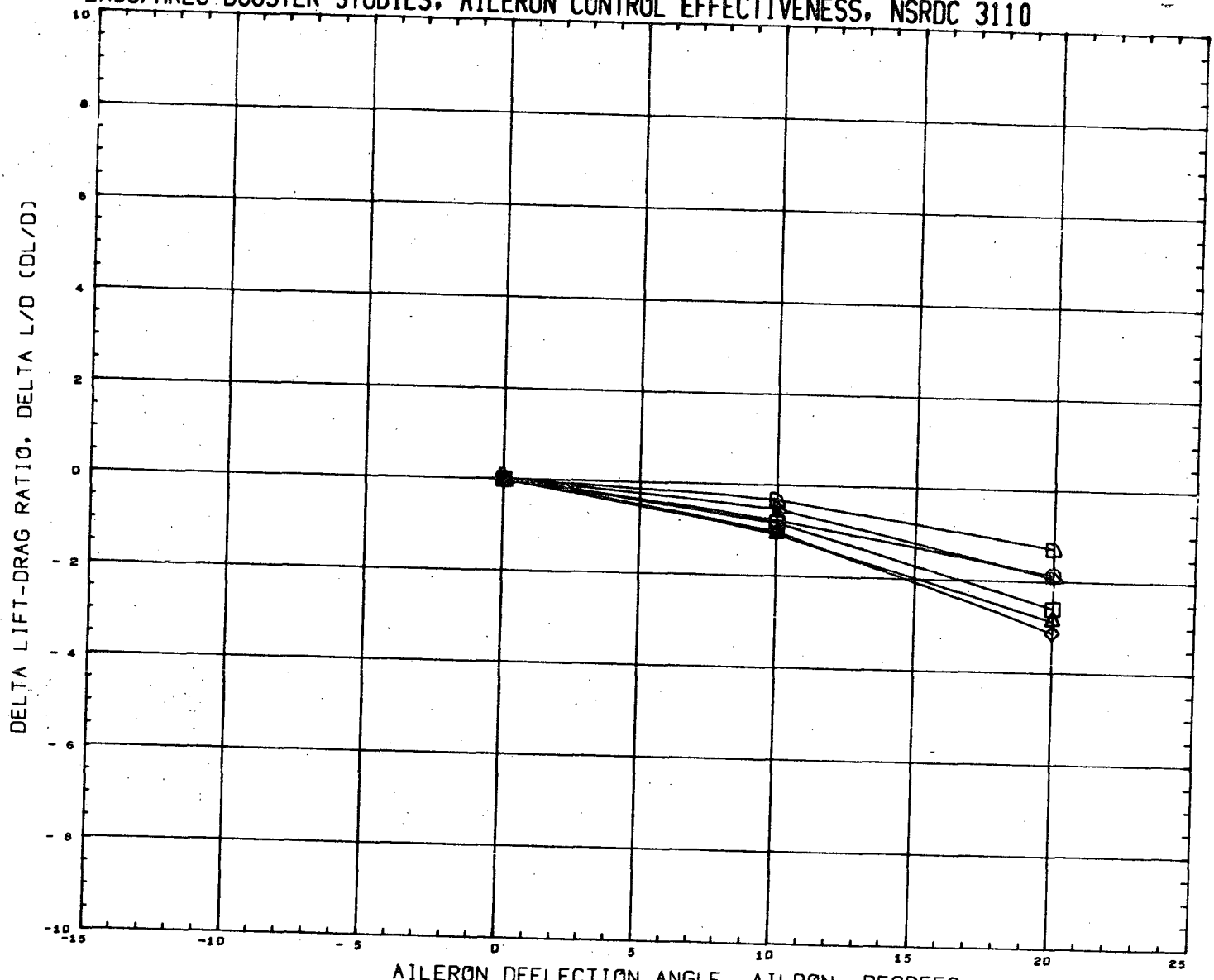
DATA SOURCE

DATASET	AILRON
EN2405	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	0.000		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	0.000		
ELEVTR	10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE		I#C			

DATA SOURCE

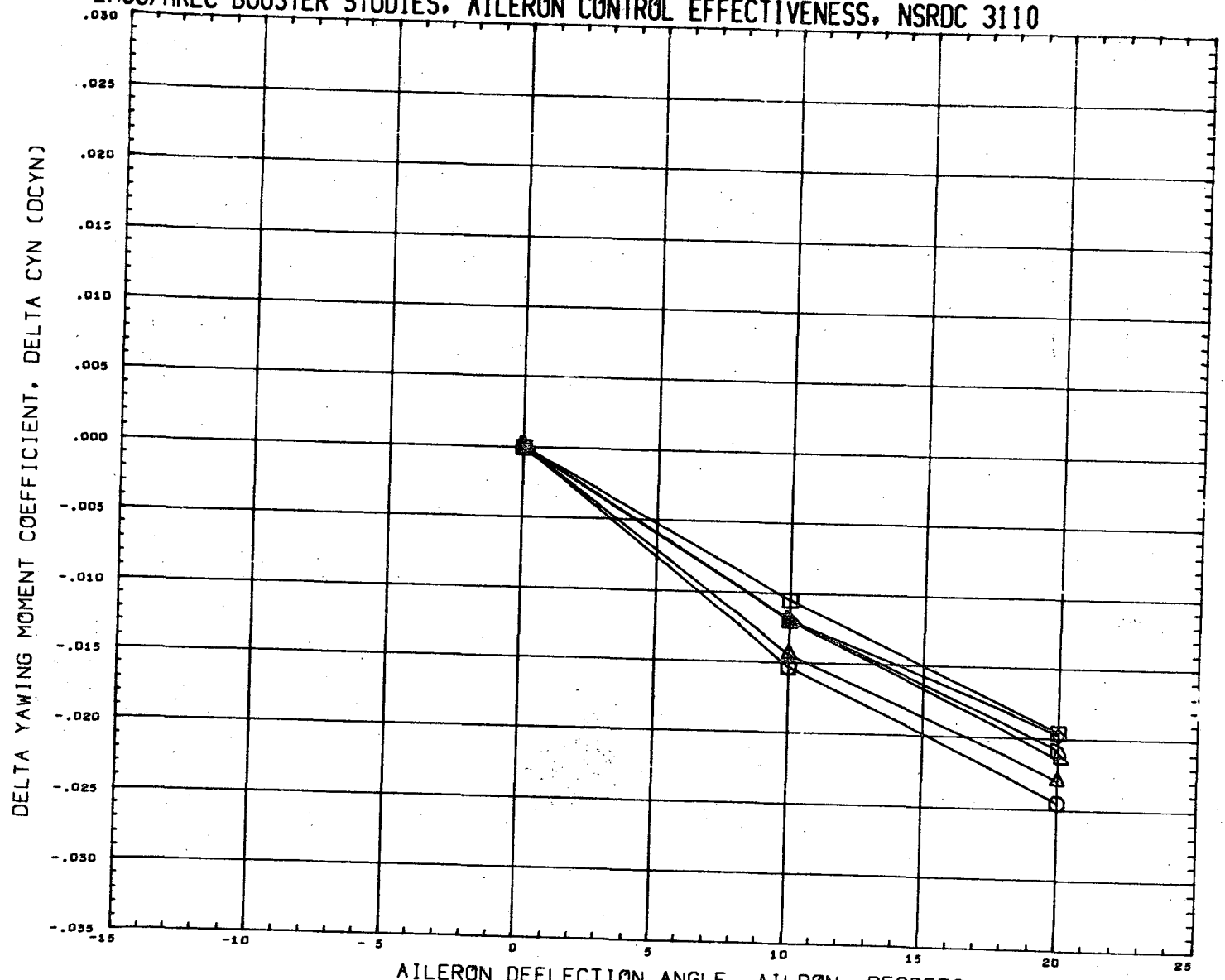
DATASET	AILRON	DATASET	AILRON
EN2353	0.000	EN2405	10.000
EN2409	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (EN2353) 17 SEP 71 PAGE 2144

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
○	-2.000
△	0.000
◇	4.000
□	6.000
◸	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.016		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	20.000		
ELEVTR	0.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

DATA SOURCE

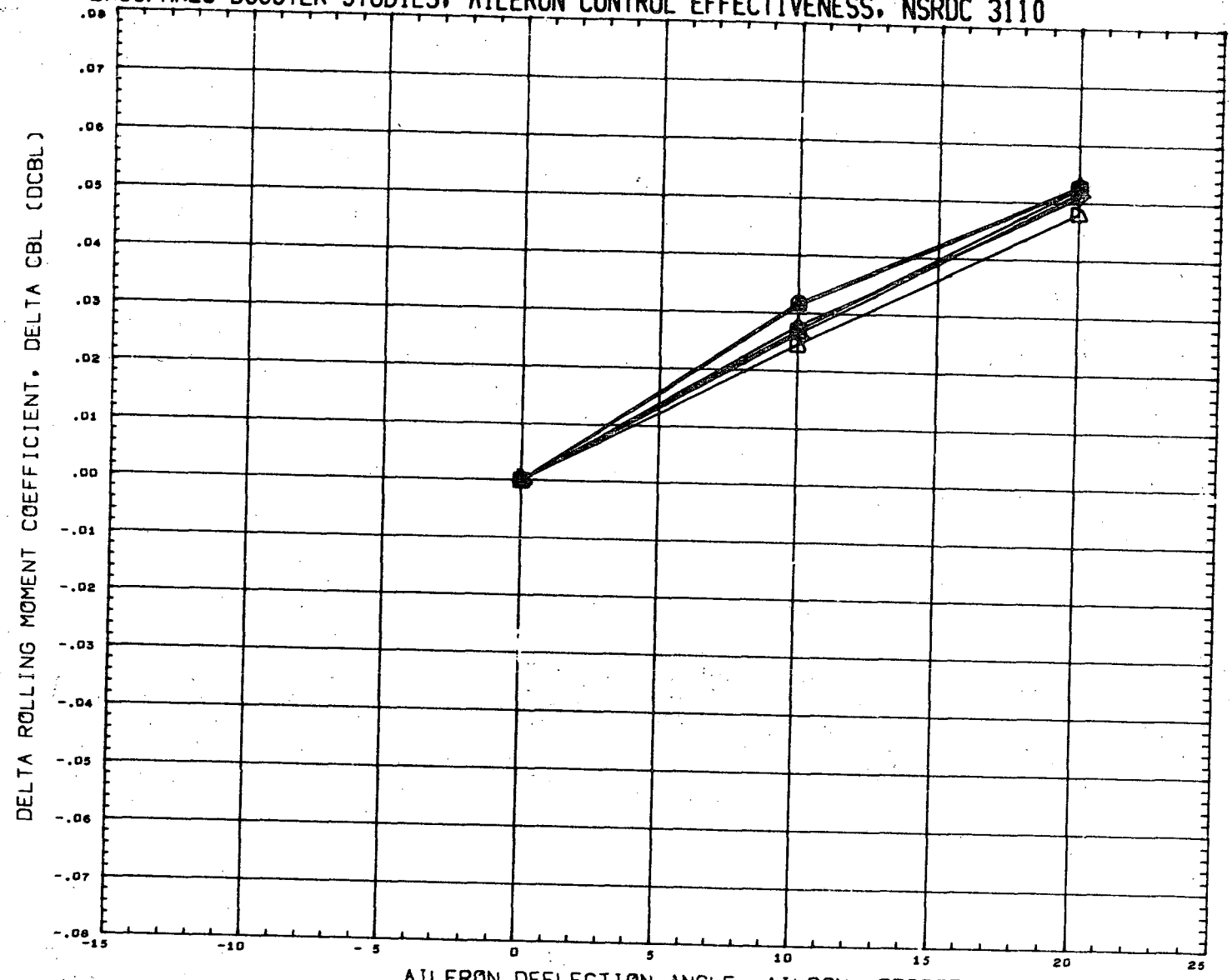
DATASET	AILRON	DATASET	AILRON
EN2325	0.000	EN2413	10.000
EN2417	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F2W1V1 (EN2325) 17 SEP 71 PAGE 2145

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	-2.000
◪	0.000
□	4.000
◇	6.000
△	8.000
O	10.000

MACH	0.380	BETA	-0.016		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	20.000		
ELEVTR	0.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

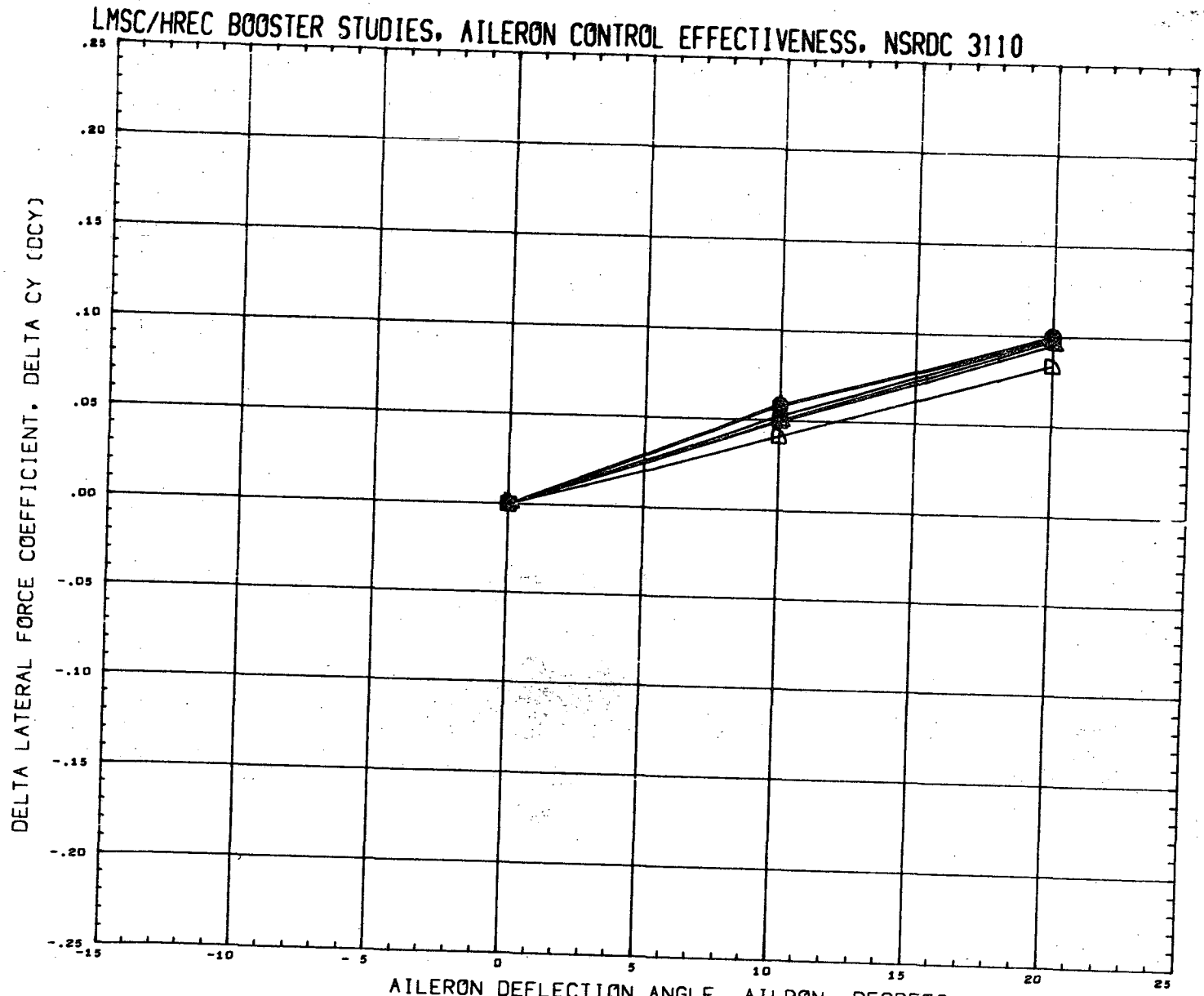
PARAMETRIC VALUES

DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2325	0.000	EN2413	10.000
EN2417	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT



SYMBOL	ALPHA
D	- 2.000
◻	0.000
◇	4.000
△	6.000
⬠	8.000
○	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.016		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	20.000		
ELEVTR	0.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

DATA SOURCE

DATASET	AILRON
EN2325	0.000
EN2417	20.000

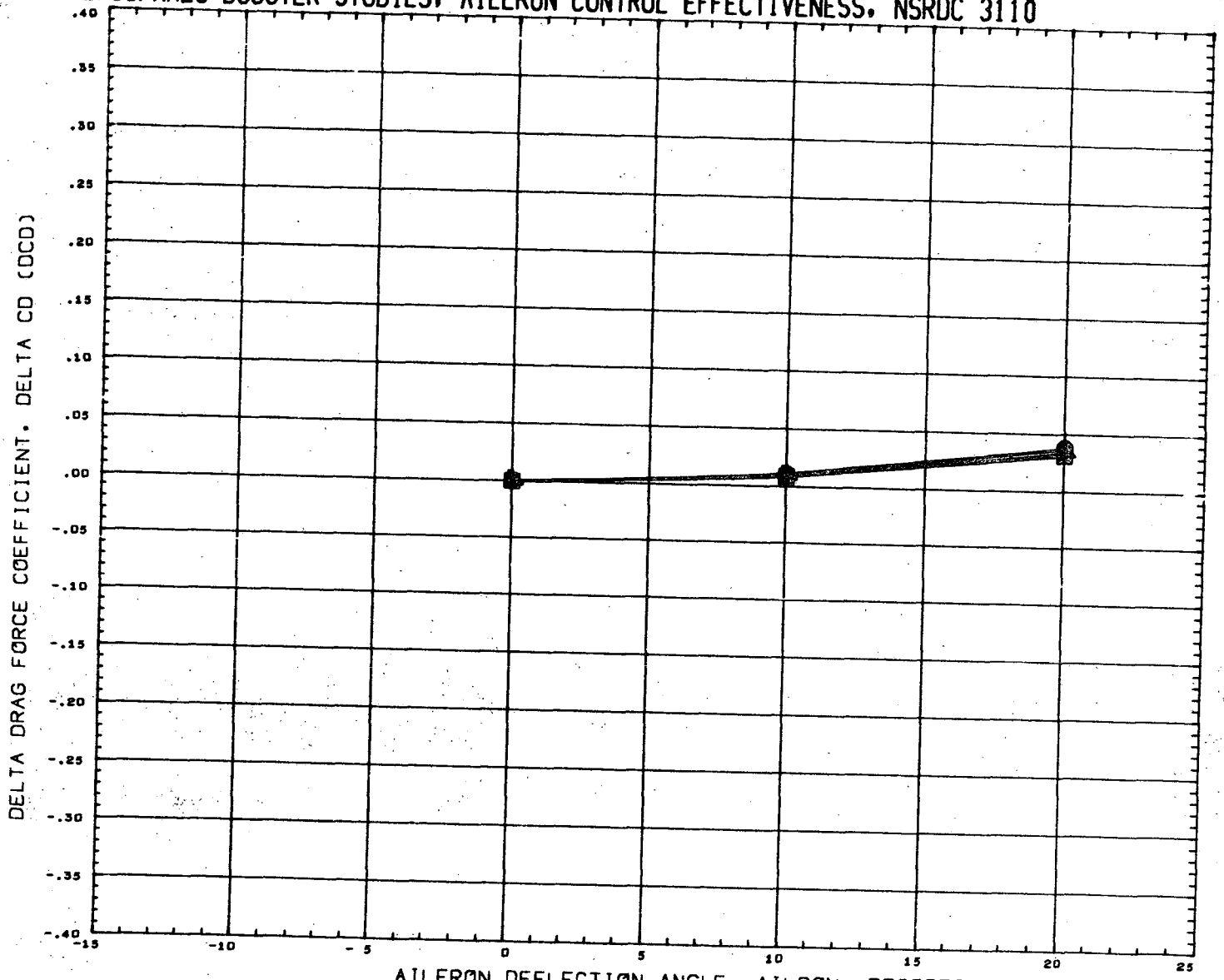
DATASET	AILRON
EN2413	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F2W1V1 (EN2325) 17 SEP 71 PAGE 2147

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
▽	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.016	
INCIDC	3.000	INCIDW	0.000	
DIHDRL	7.660	CANARD	20.000	
ELEVTR	0.000	RUDDER	0.000	
WNGPOS	1.000	CNDPOS	1.000	
DATA HIST. CODE	I*C			

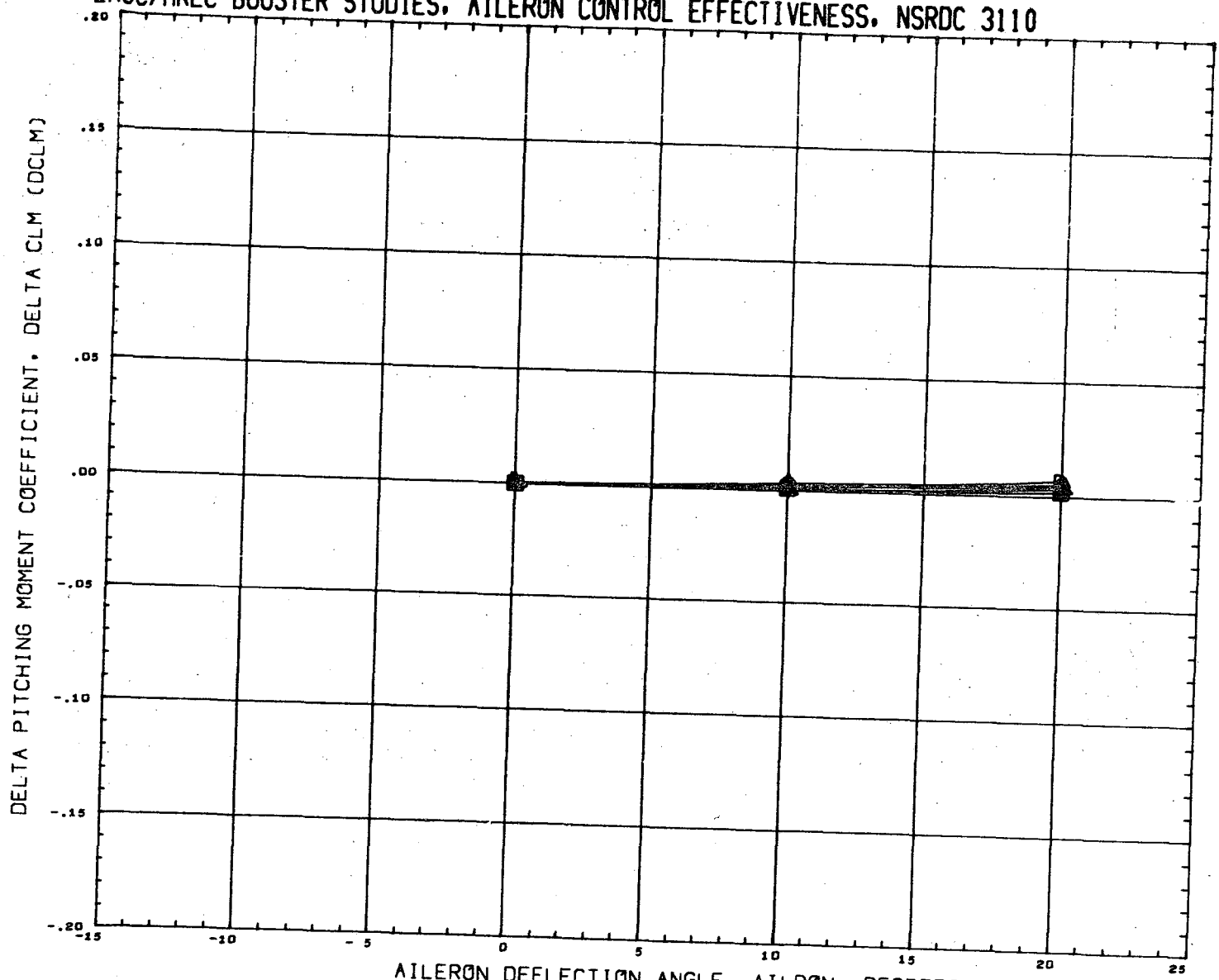
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2325	0.000	EN2413	10.000
EN2417	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
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□	0.000
◇	4.000
△	6.000
○	8.000
▷	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.016		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	20.000		
ELEVTR	0.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I#C				

DATA SOURCE

DATASET	AILRON
EN2325	0.000
EN2417	20.000

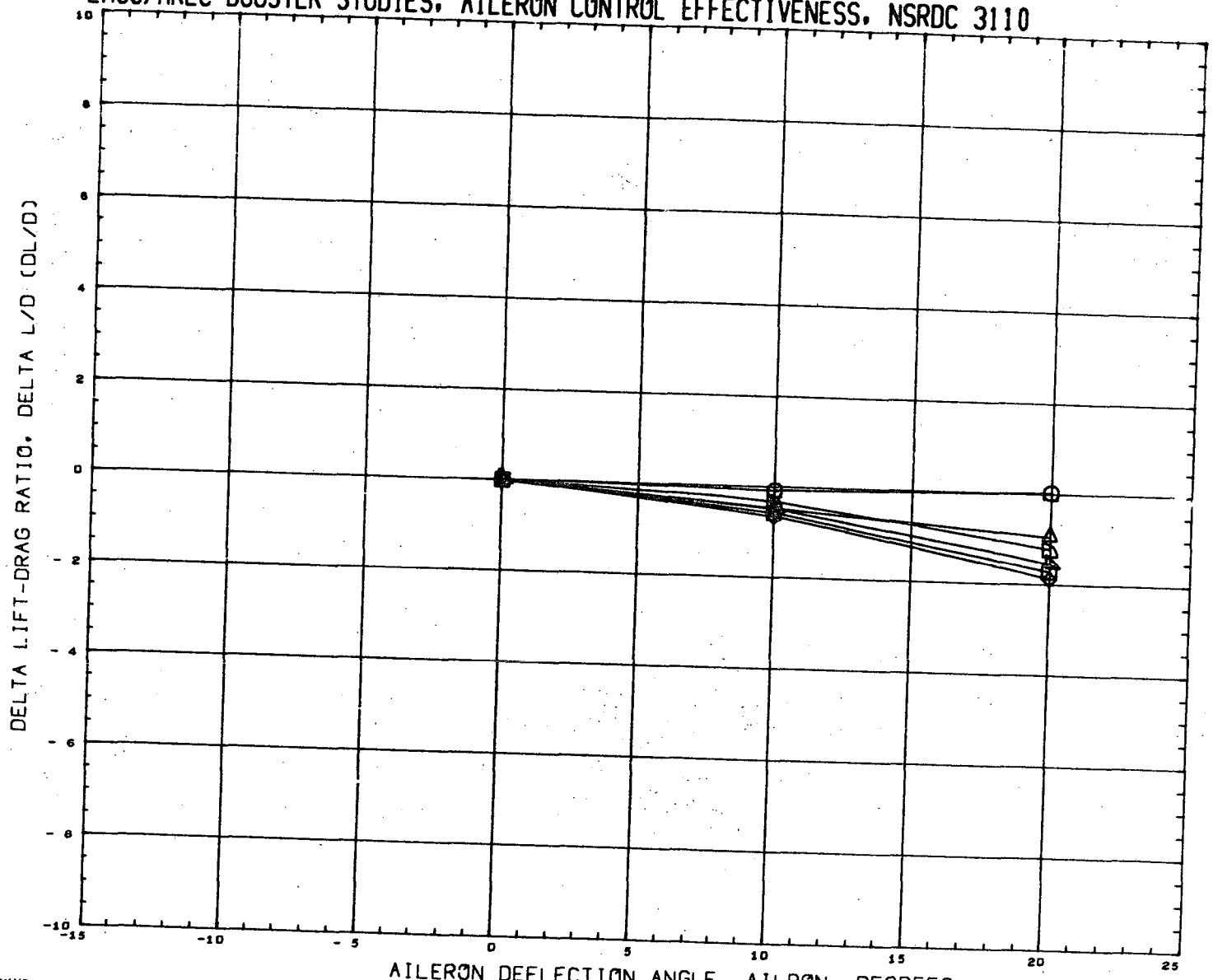
DATASET	AILRON
EN2413	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F2W1V1 (EN2325) 17 SEP 71 PAGE 2149

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
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□	0.000
◇	4.000
△	6.000
○	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.016		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	20.000		
ELEVTR	0.000	RUDDER	-0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	1*C				

DATA SOURCE

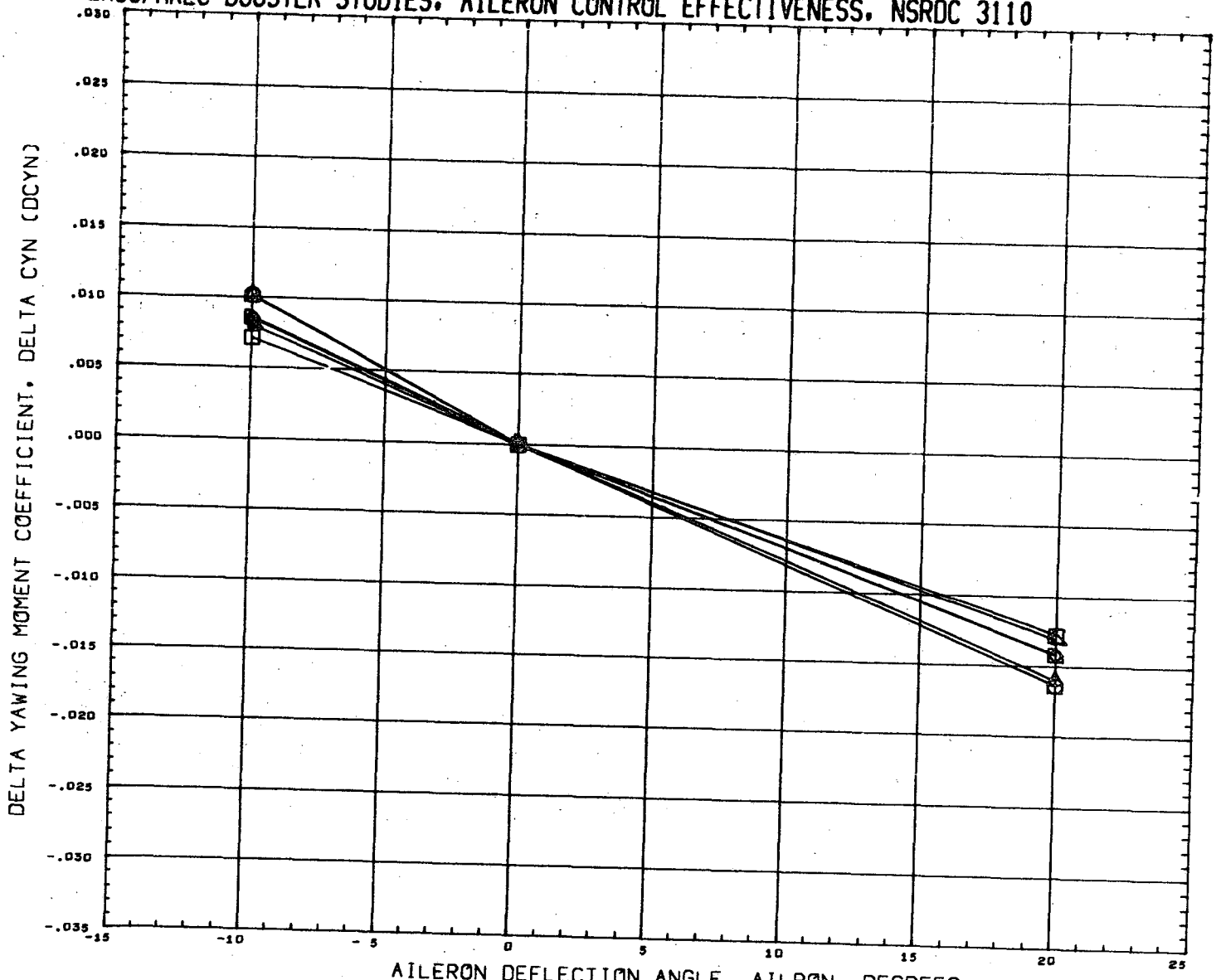
DATASET	AILRON	DATASET	AILRON
EN2325	0.000	EN2413	10.000
EN2417	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F2W1V1 (EN2325) 17 SEP 71 PAGE 2150

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
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△	0.000
◇	4.000
□	6.000
▷	8.000
○	10.000

PARAMETRIC VALUES

MACH	0.380	INCIDC	3.000		
INCIDW	0.000	DIHDRL	7.660		
CANARD	20.000	ELEVTR	-10.000		
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				
DATA HIST. CODE		MVI#C			

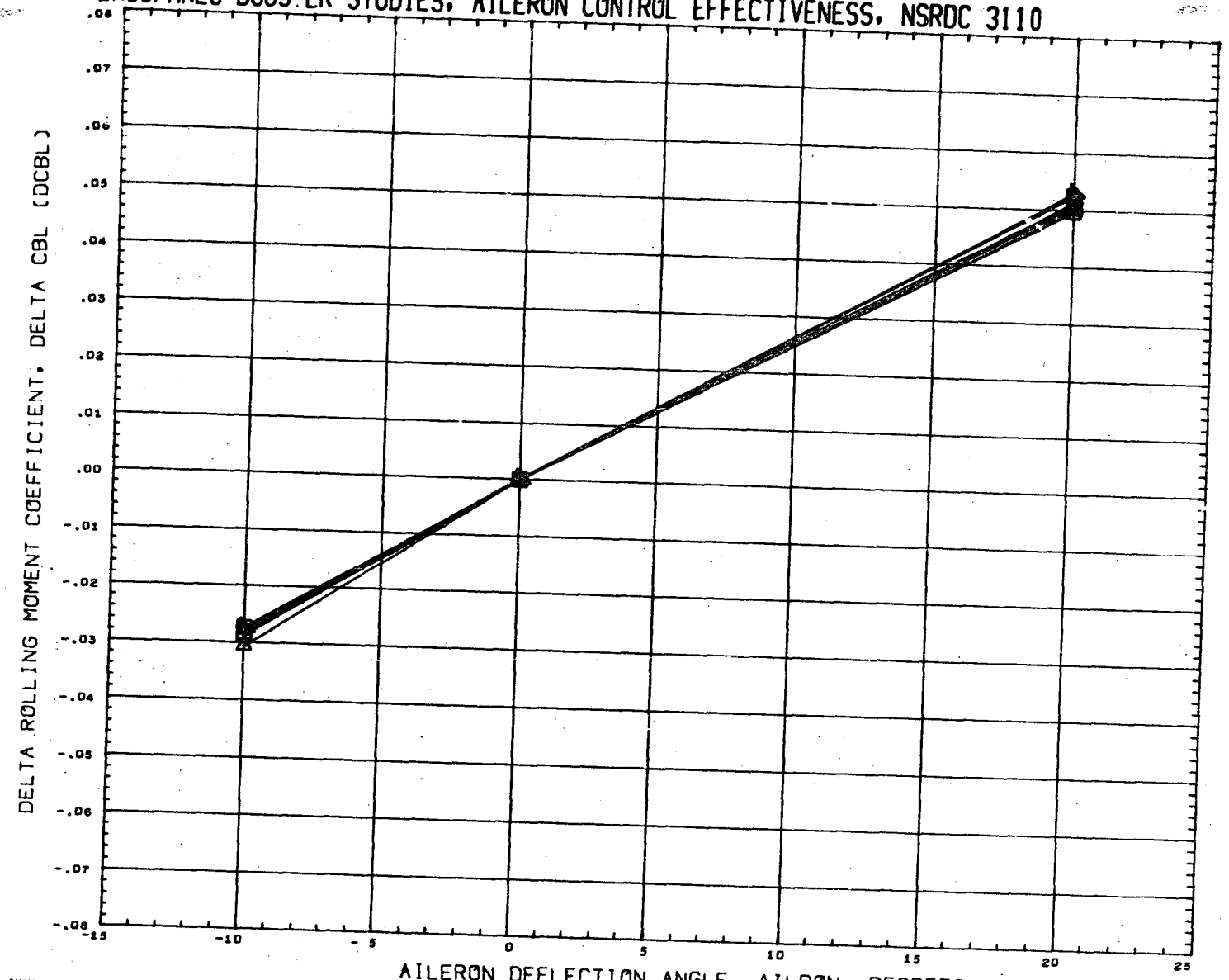
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2421	-10.000	EN2349	0.000
EN2425	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
◇	-2.000
□	0.000
△	4.000
▽	6.000
⊠	8.000
⊡	10.000

MACH	0.380	INCIDC	3.000		
INCIDW	0.000	DIHDRL	7.660		
CANARD	20.000	ELEVTR	-10.000		
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				
DATA HIST. CODE		MVI#C			

PARAMETRIC VALUES

DATA SOURCE

DATASET	AILRON
EN2421	-10.000
EN2425	20.000

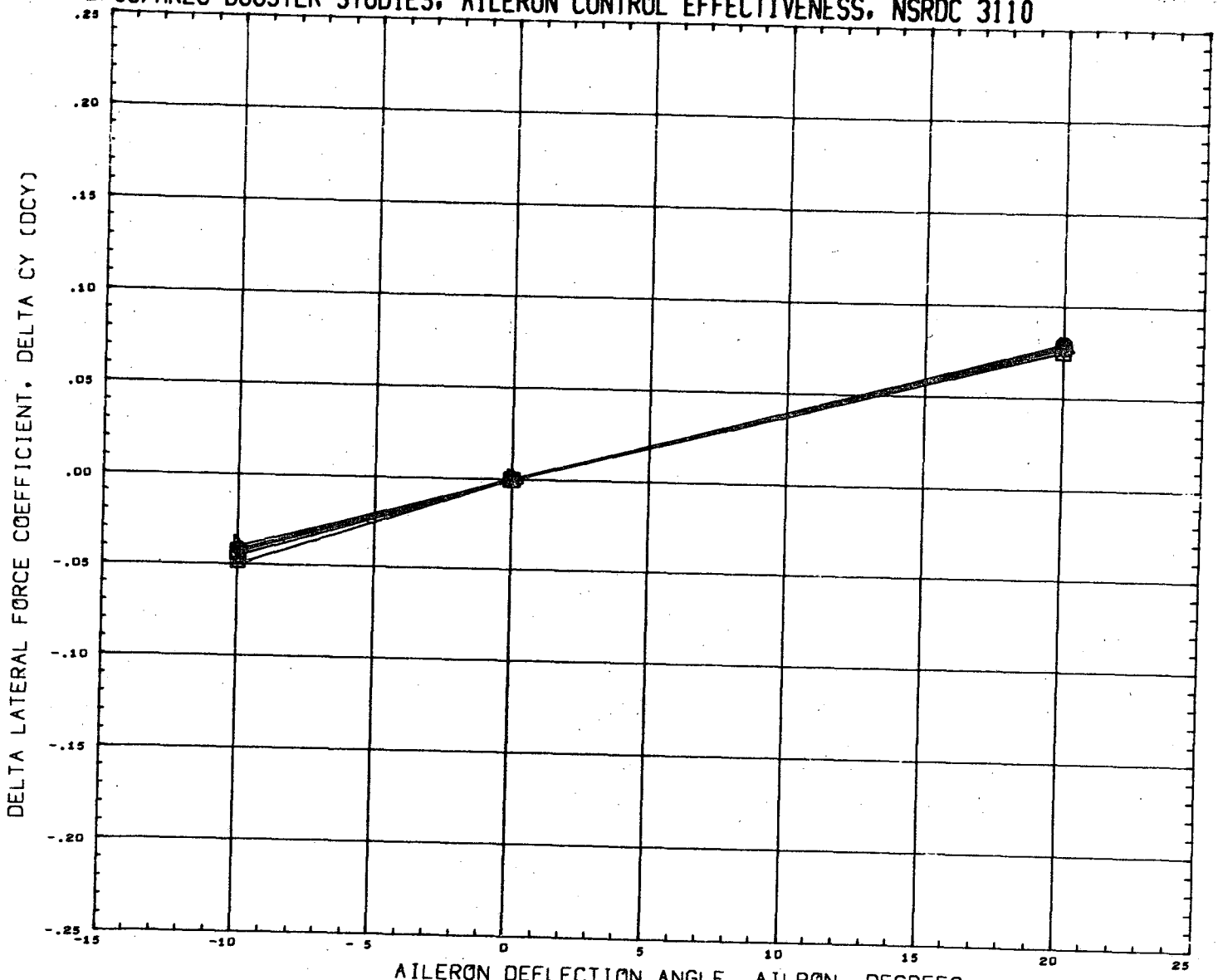
DATASET	AILRON
EN2349	0.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F2W1V1 (EN2421) 17 SEP 71 PAGE 2152

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
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△	0.000
◇	4.000
□	6.000
▽	8.000
D	10.000

MACH	0.360
INCIDW	0.000
CANARD	20.000
RUDDER	0.000
CNDPOS	1.000
DATA HIST. CODE	MVI*C

PARAMETRIC VALUES

INCIDC	3.000
DIHDRL	7.660
ELEVTR	-10.000
WNGPOS	1.000

DATA SOURCE

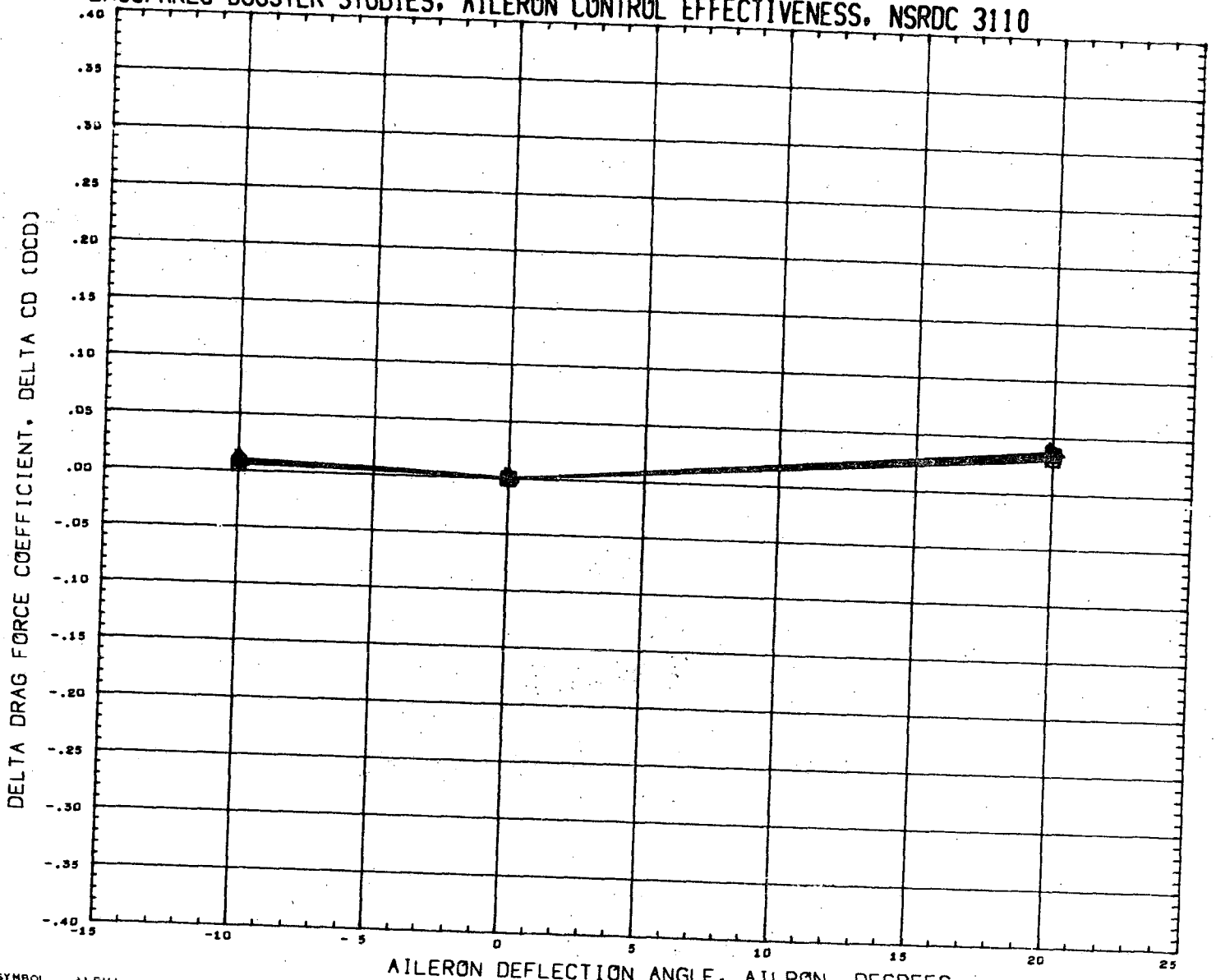
DATASET	AILRON
EN2421	-10.000
EN2425	20.000

DATASET	AILRON
EN2349	0.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	-2.000
◇	0.000
□	4.000
◇	6.000
D	8.000
O	10.000

PARAMETRIC VALUES

MACH	0.380	INCIDC	3.000		
INCIDW	0.000	DIHDRL	7.660		
CANARD	20.000	ELEVTR	-10.000		
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				
DATA HIST. CODE	MVI#C				

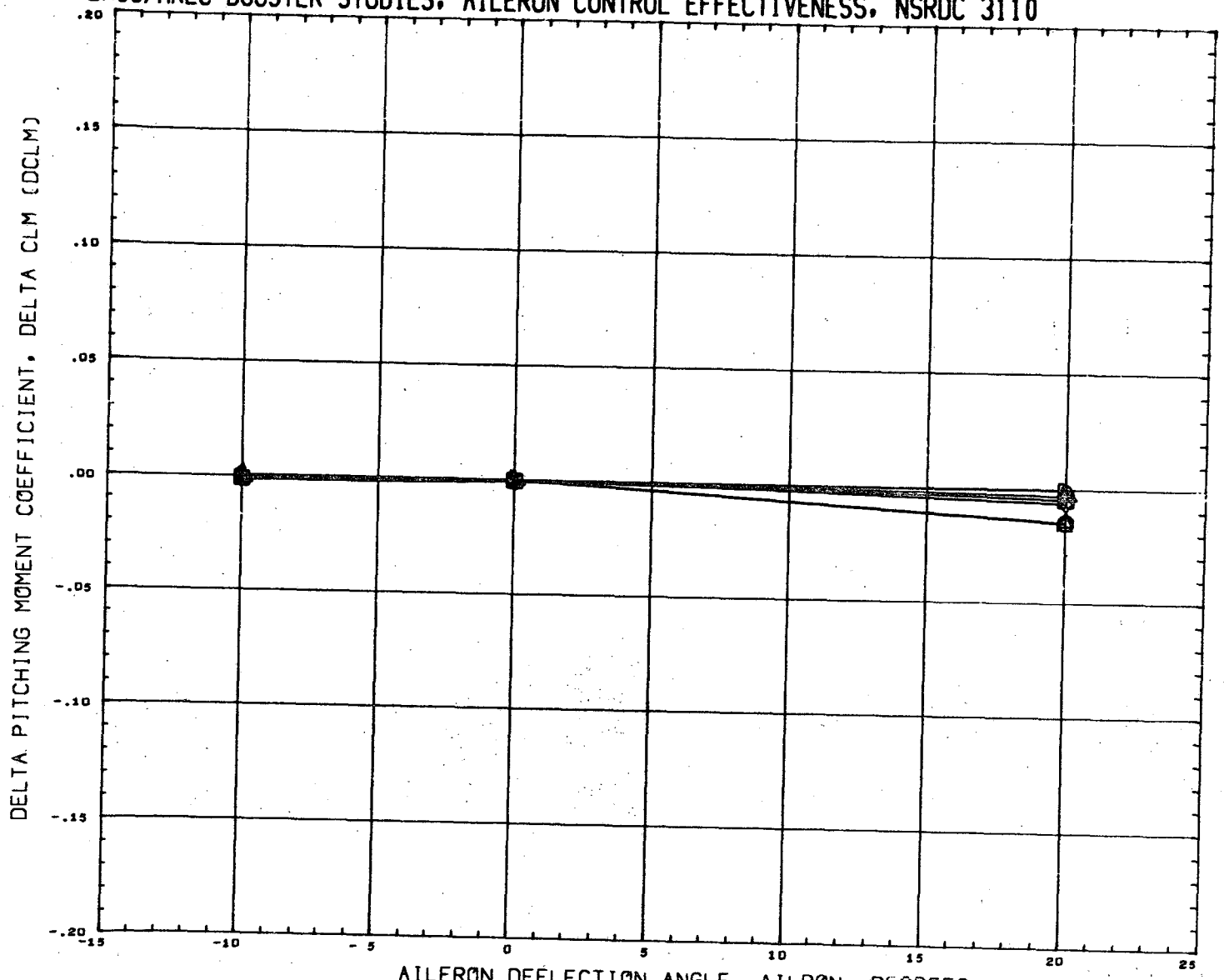
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2421	-10.000	EN2349	0.000
EN2425	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
☐	0.000
◇	4.000
△	6.000
○	8.000
D	10.000

MACH	0.380	INCIDC	3.000	DATASET	AILRON
INCIDW	0.000	DIHDRL	7.660	EN2421	-10.000
CANARD	20.000	ELEVTR	-10.000	EN2425	20.000
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				
DATA HIST. CODE	MVI#C				

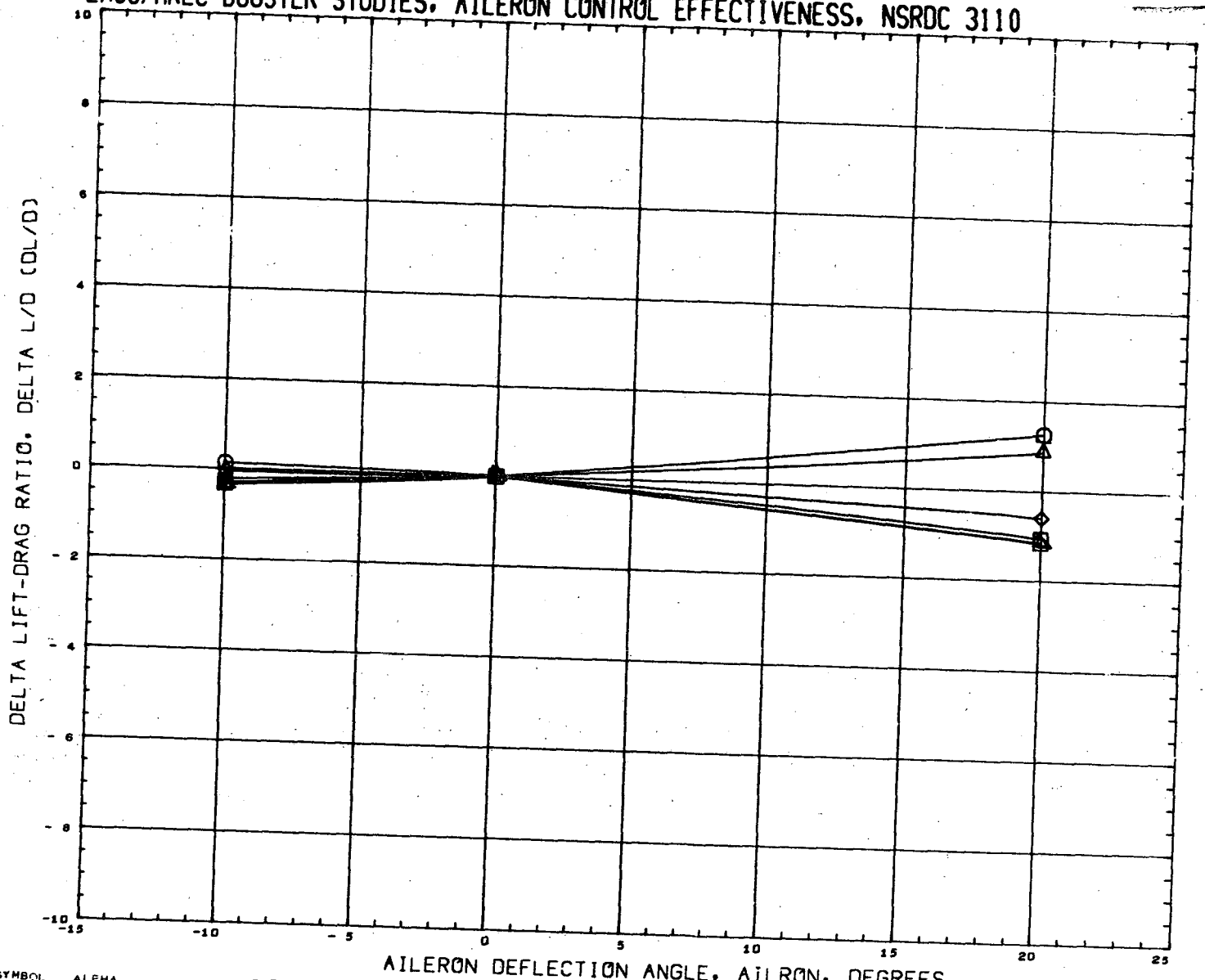
DATA SOURCE

DATASET	AILRON
EN2349	0.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

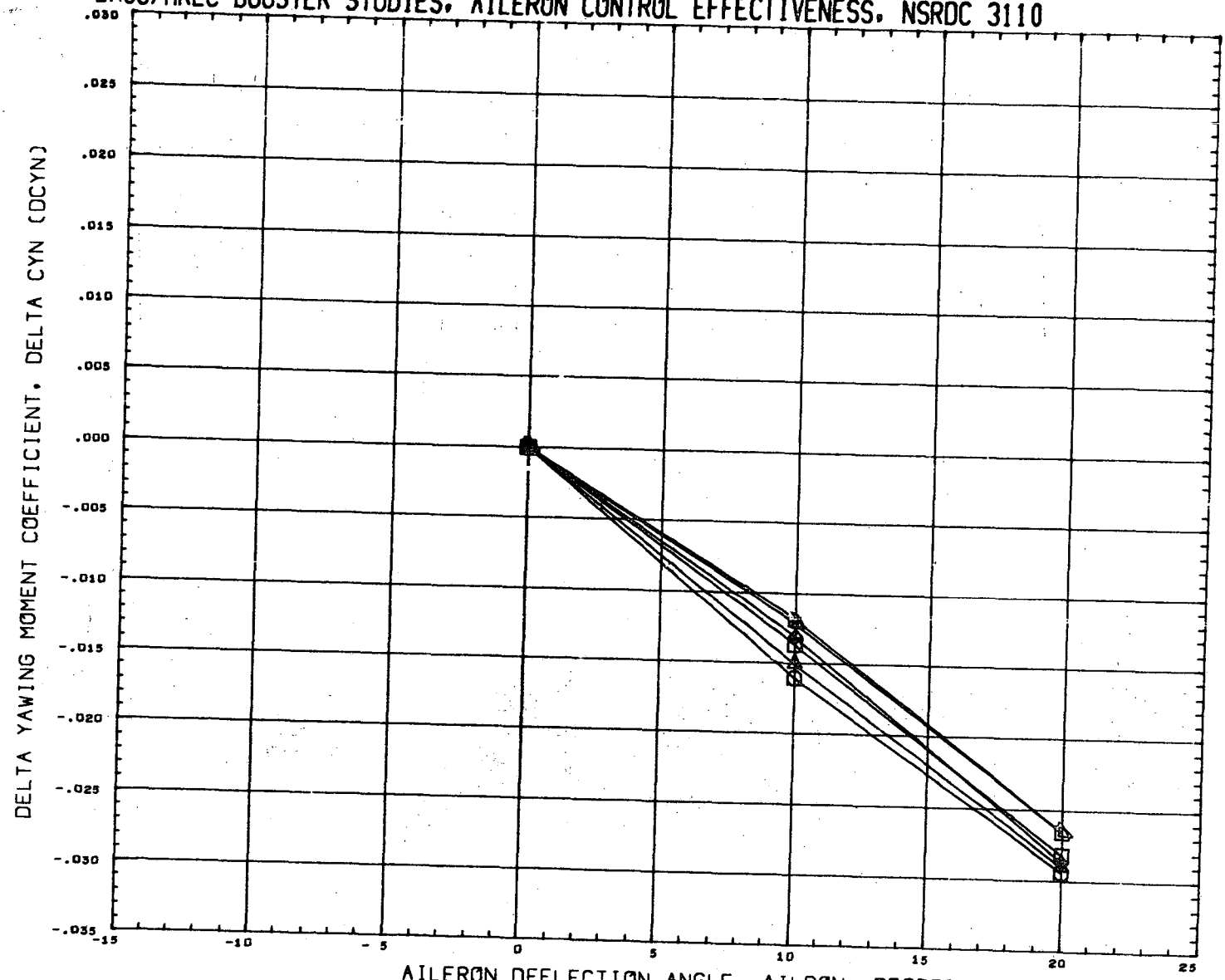
LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	- 2.000
△	0.000
□	4.000
◇	6.000
▷	8.000
D	10.000

		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
MACH	0.380	INCIDC	3.000	DATASET	AILRON	DATASET	AILRON	SREF	1.3550	SQ.FT.
INCIDW	0.000	DIHDRL	7.660	EN2421	- 10.000	EN2349	0.000	LREF	41.4360	INCHES
CANARD	20.000	ELEVTR	- 10.000	EN2425	20.000			BREF	41.4360	INCHES
RUDDER	0.000	WNGPOS	1.000					XMRP	31.1400	INCHES
CNDPOS	1.000							YMRP	0.0000	INCHES
DATA HIST. CODE		MVI#C						ZMRP	0.2250	INCHES
								SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALFHA
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□	4.000
◇	6.000
▽	8.000
▷	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.001
INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	CANARD	20.000
ELEVTR	10.000	RUDDER	0.000
WNGPOS	1.000	CNDPOS	1.000
DATA HIST. CODE	I*C		

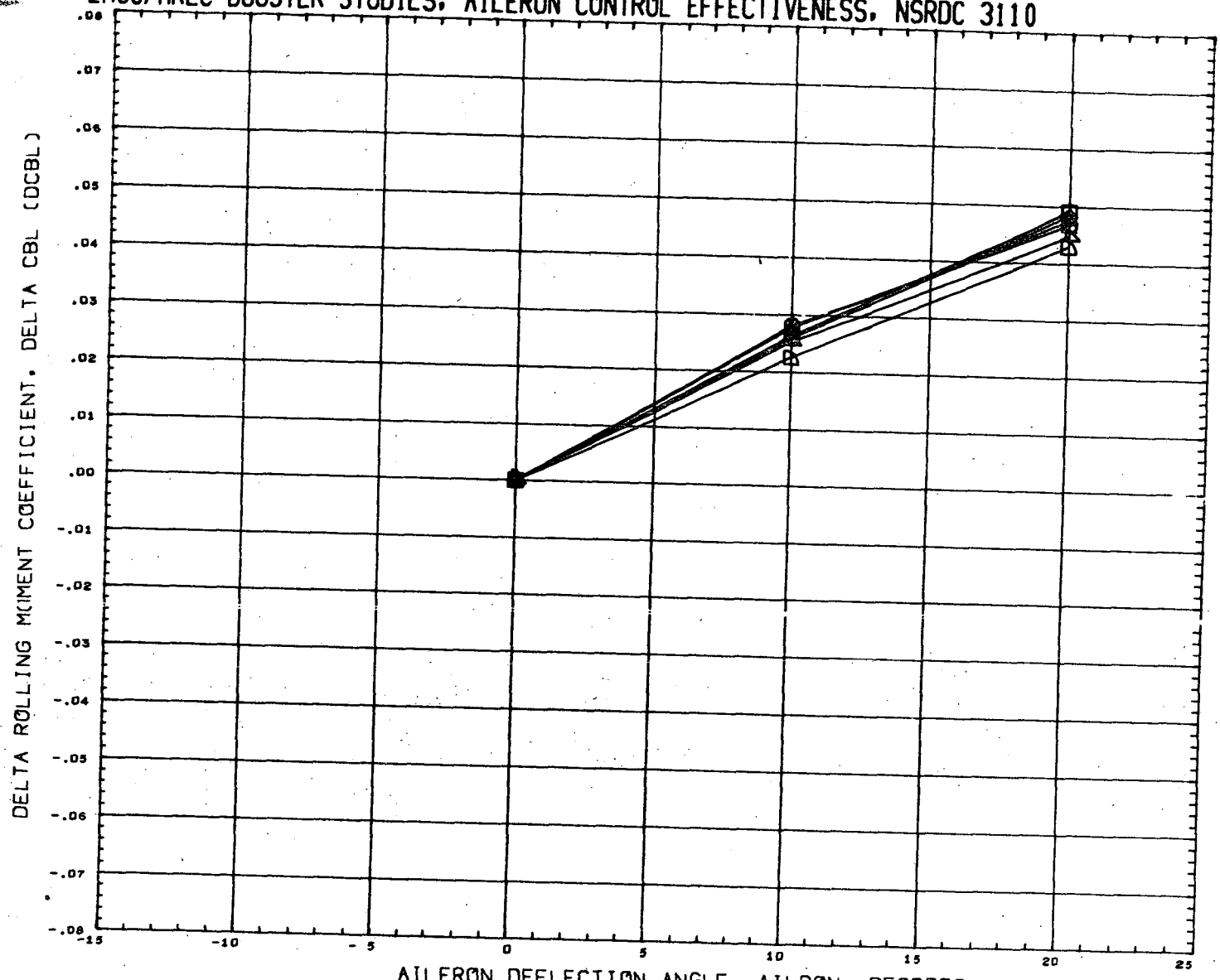
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2361	0.000	EN2429	10.000
EN2433	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
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□	0.000
◇	4.000
▷	6.000
▷	8.000
▽	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.001		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	20.000		
ELEVTR	10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

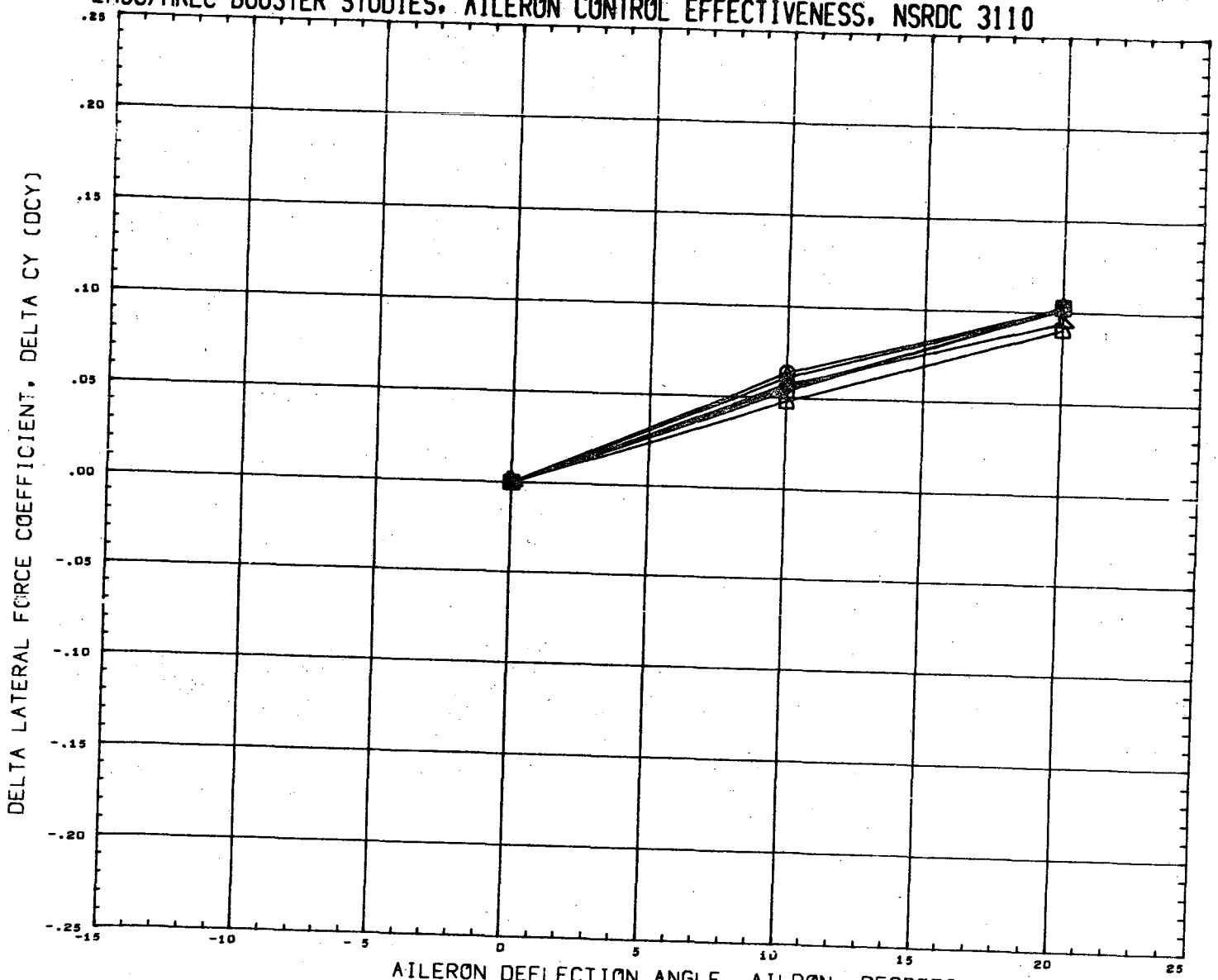
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2361	0.000	EN2429	10.000
EN2433	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



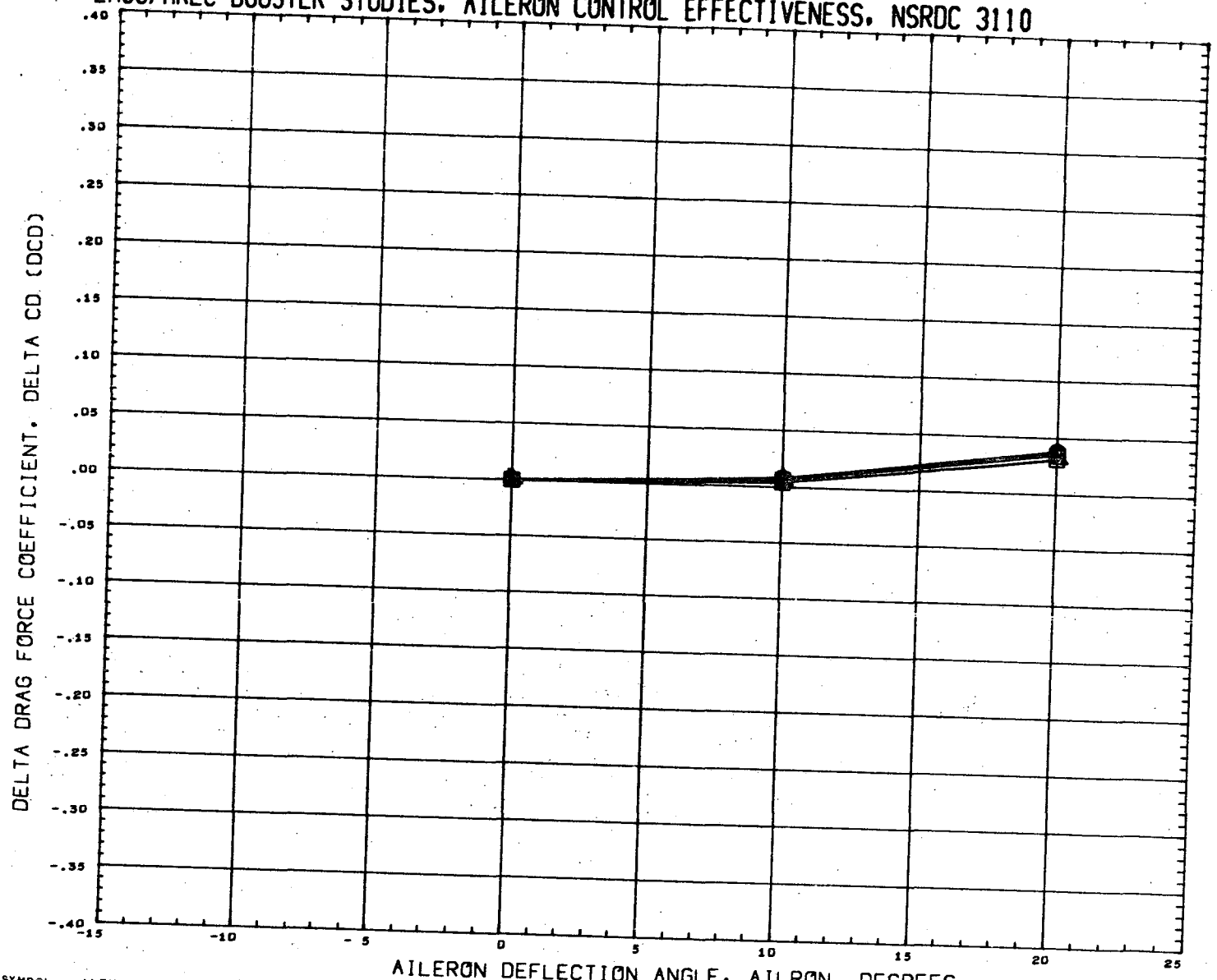
SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
D	10.000

	PARAMETRIC VALUES				
MACH	0.380	BETA	-0.001		
INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	CANARD	20.000		
ELEVTR	10.000	RUDDER	0.000		
WNGPOS	1.000	CNDPOS	1.000		
DATA HIST. CODE	I*C				

DATA SOURCE			
DATASET	AILRON	DATASET	AILRON
EN2361	0.000	EN2429	10.000
EN2433	20.000		

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
◇	0.000
▽	4.000
□	6.000
◇	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-	0.001
INCIDC	3.000	INCIDW		0.000
DIHDRL	7.660	CANARD		20.000
ELEVTR	10.000	RUDDER		0.000
WNGPOS	1.000	CNDPOS		1.000
DATA HIST. CODE	I*C			

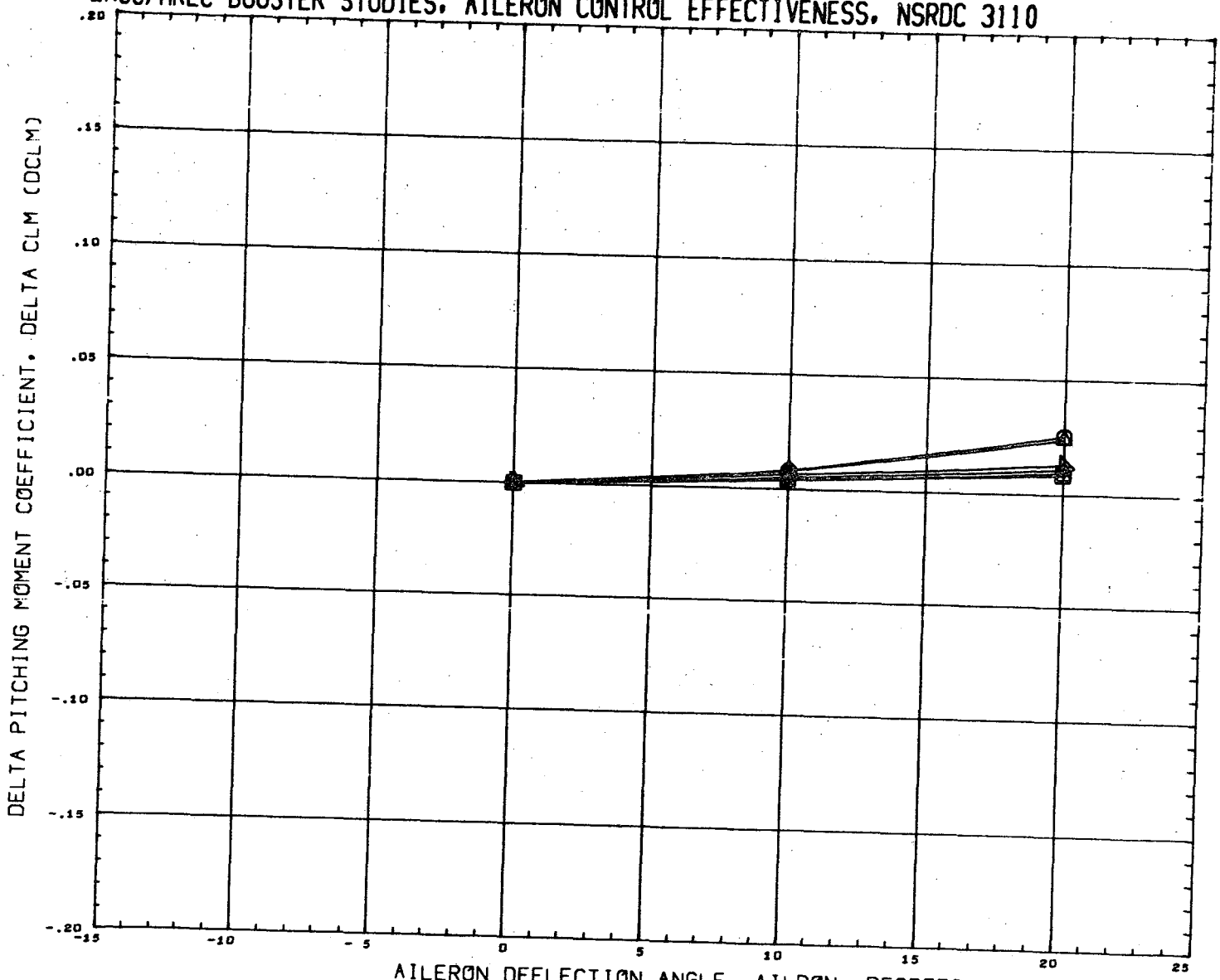
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2361	0.000	EN2429	10.000
EN2433	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
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△	0.000
◇	4.000
□	6.000
▷	8.000
○	10.000

	PARAMETRIC VALUES		
MACH	0.380	BETA	-0.001
INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	CANARD	20.000
ELEVTR	10.000	RUDDER	0.000
WNGPOS	1.000	CNDPOS	1.000
DATA HIST. CODE	I*C		

DATA SOURCE			
DATASET	AILRON	DATASET	AILRON
EN2361	0.000	EN2429	10.000
EN2433	20.000		

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

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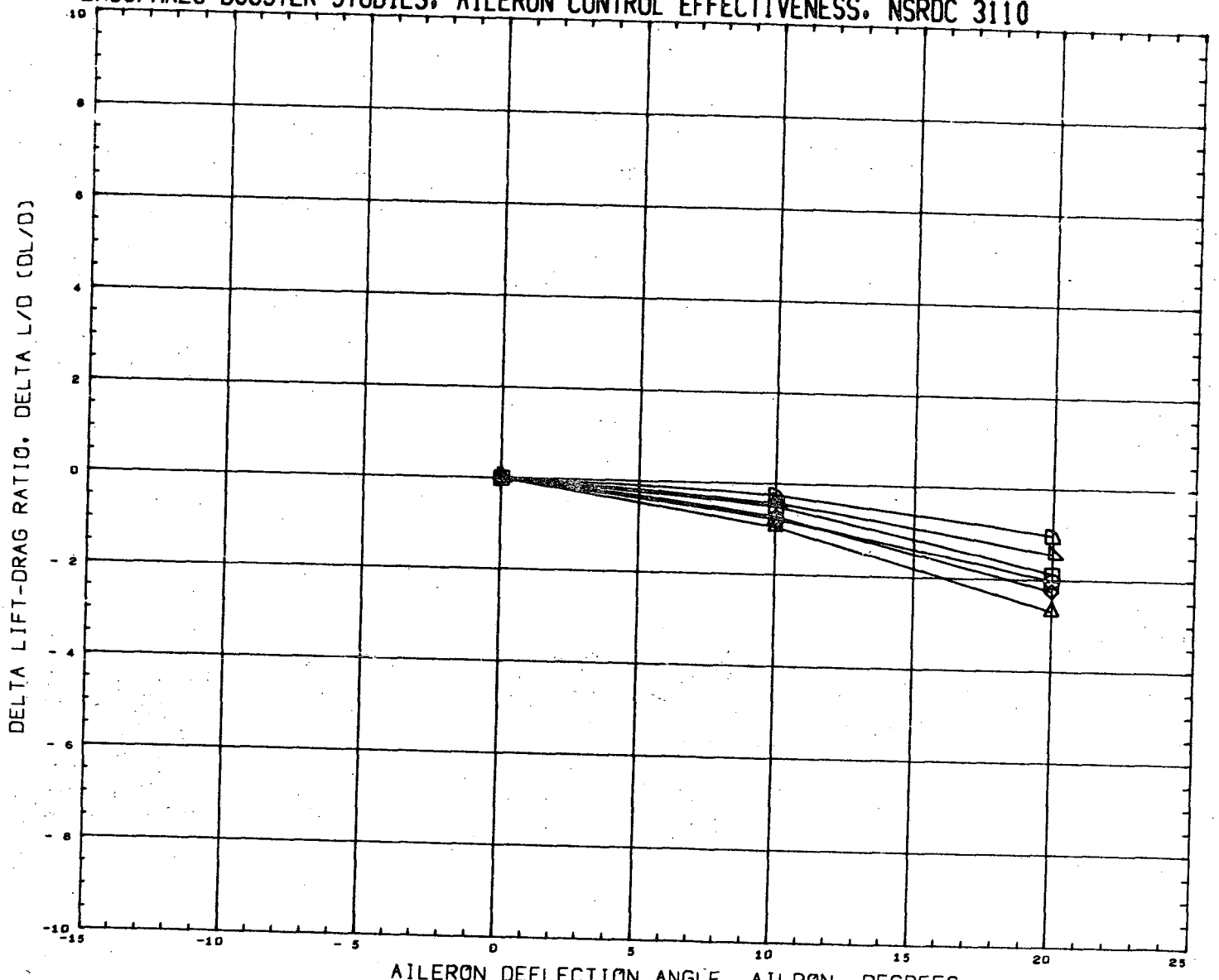
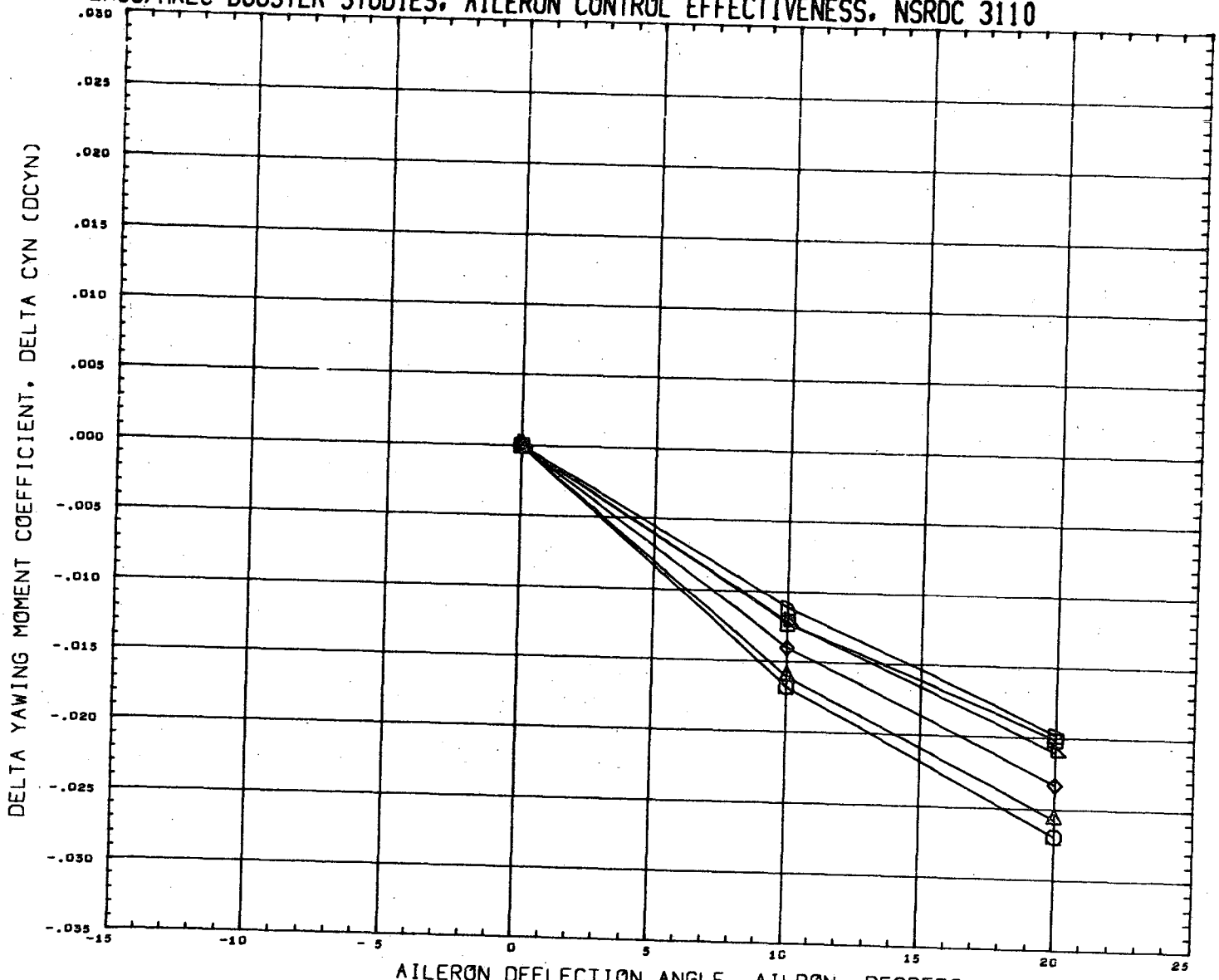
LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
D	- 2.000	MACH	0.380	BETA	- 0.001	DATASET	AILRON	DATASET	AILRON	SREF	1.3550	SQ.FT.
□	0.000	INCIDC	3.000	INCIDW	0.000	EN2361	0.000	EN2429	10.000	LREF	41.4360	INCHES
◇	4.000	DIHDRL	7.660	CANARD	20.000	EN2433	20.000			BREF	41.4360	INCHES
△	6.000	ELEVTR	10.000	RUDDER	0.000					XMRP	31.1400	INCHES
	8.000	WNGPOS	1.000	CNDPOS	1.000					YMRP	0.0000	INCHES
	10.000	DATA HIST. CODE		I#C						ZMRP	0.2250	INCHES
										SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



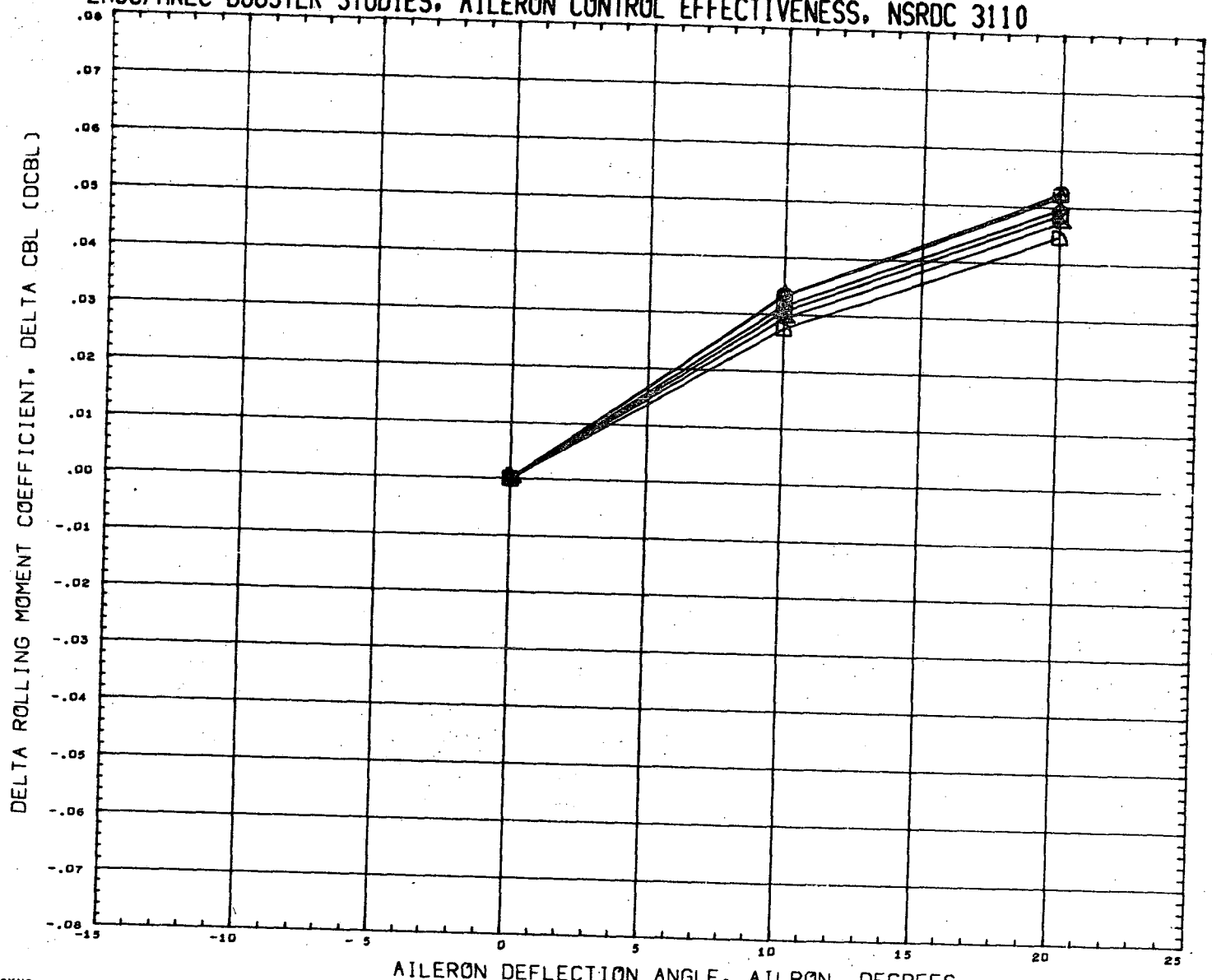
SYMBOL	ALPHA
○	-2.000
△	0.000
◇	4.000
□	6.000
▽	8.000
D	10.000

PARAMETRIC VALUES					
MACH	0.380	BETA	0.005		
INCIDW	0.000	DIHDRL	7.660		
RUDDER	0.000	ELEVTR	0.000		
WNGPOS	1.000				
DATA HIST. CODE	I*C				

DATA SOURCE			
DATASET	AILRON	DATASET	AILRON
EN2465	0.000	EN2481	10.000
EN2485	20.000		

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
D	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	0.005	DATASET	AILRON
INCIDW	0.000	DIHDRL	7.660	EN2465	0.000
RUDDER	0.000	ELEVTR	0.000	EN2465	20.000
WNGPOS	1.000				

DATA SOURCE

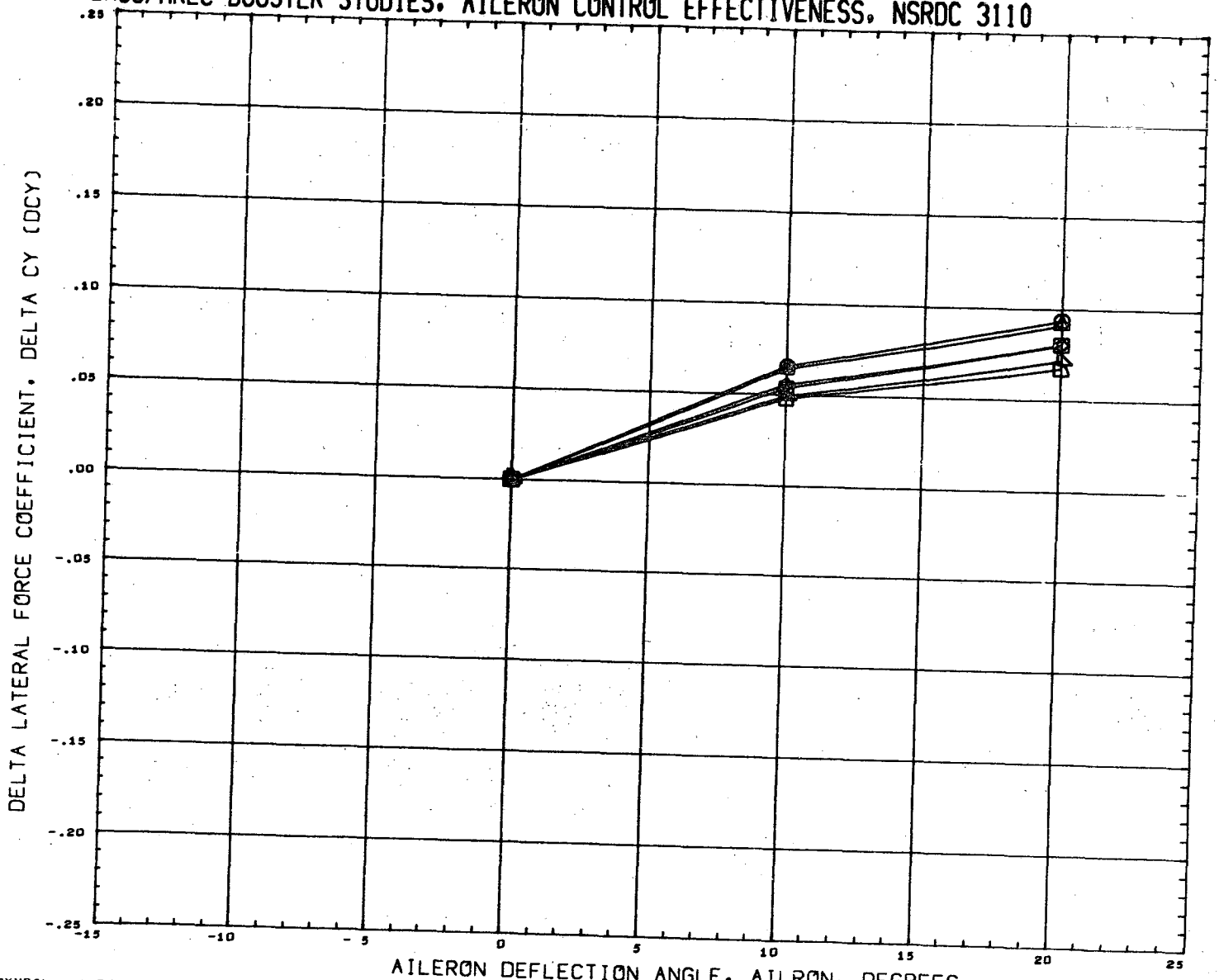
DATASET	AILRON	DATASET	AILRON
EN2481	10.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

DATA HIST. CODE I*C

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110

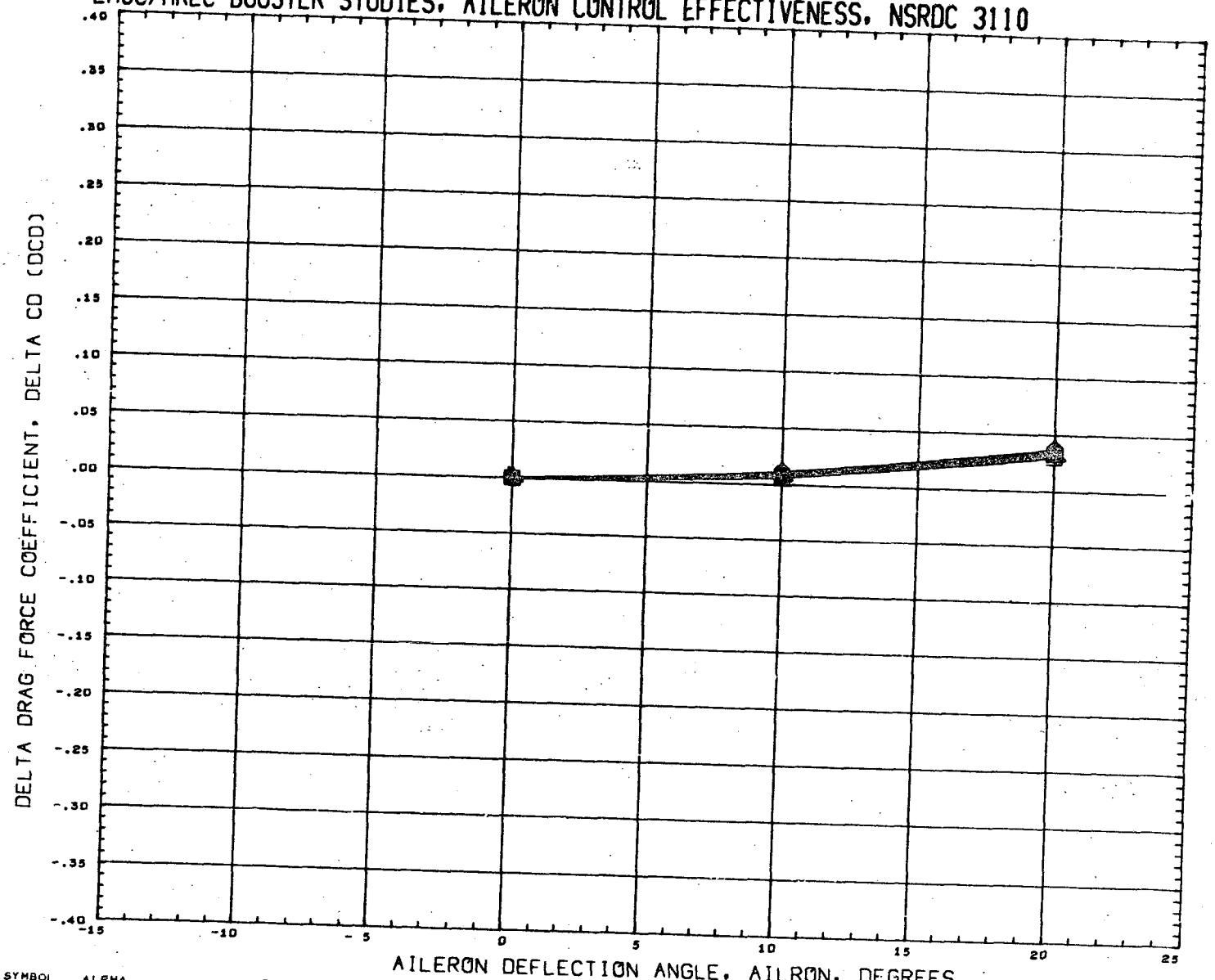


SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
	10.000

	PARAMETRIC VALUES				DATA SOURCE				REFERENCE INFORMATION		
MACH	0.380	BETA	0.005	DATASET	AILRON	DATASET	AILRON	SREF	1.3550	SQ.FT.
INCIDW	0.000	DIHDRL	7.660	EN2465	0.000	EN2481	10.000	LREF	41.4360	INCHES
RUDDER	0.000	ELEVTR	0.000	EN2485	20.000			BREF	41.4360	INCHES
WNGPOS	1.000							XMRP	31.1400	INCHES
								YMRP	0.0000	INCHES
								ZMRP	9.2250	INCHES
								SCALE	1.5000	PERCNT

DATA HIST. CODE I*C

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	-2.000
◇	0.000
△	4.000
□	6.000
○	8.000
	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	0.005		
INCIDW	0.000	DIHDRL	7.660		
RUDDER	0.000	ELEVTR	0.000		
WNGPOS	1.000				

DATA HIST. CODE I*C

DATA SOURCE

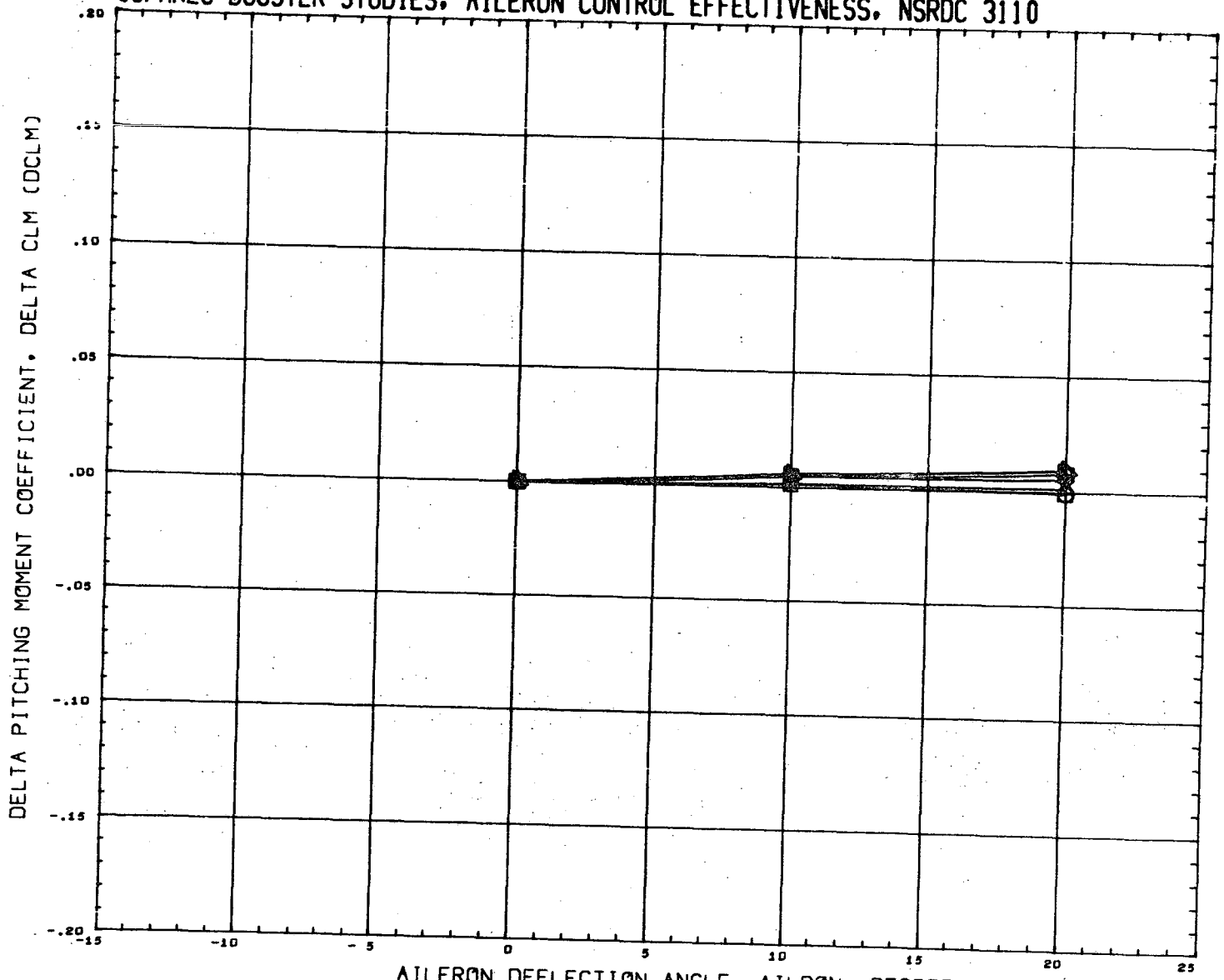
DATASET	AILRON	DATASET	AILRON
EN2465	0.000	EN2481	10.000
EN2485	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

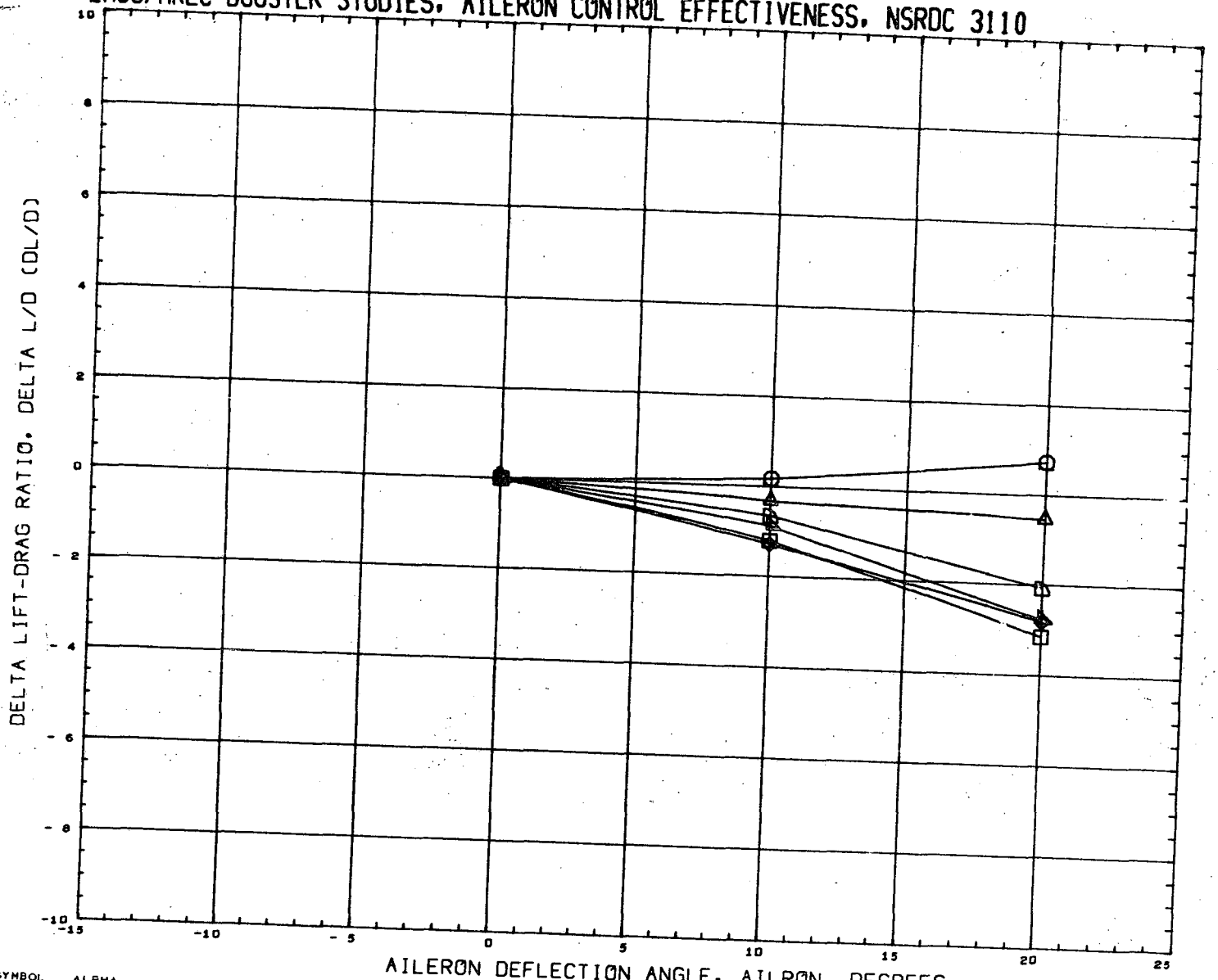
NSRDC-3110, MSFC/LMSC BOOSTER B1V1W1 (EN2465) 17 SEP 71 PAGE 2166

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
	- 2.000	MACH	0.360	BETA	0.005	DATASET	AILRON	DATASET	AILRON	SREF	1.3550	SQ.FT.
	0.000	INCIDW	0.000	DIHDRL	7.660	EN2465	0.000	EN2481	10.000	LREF	41.4360	INCHES
	4.000	RUDDER	0.000	ELEVTR	0.000	EN2485	20.000			BREF	41.4360	INCHES
	6.000	WNGPOS	1.000							XMRP	31.1400	INCHES
	8.000									YMRP	0.0000	INCHES
	10.000	DATA HIST. CODE	I*C							ZMRP	0.2250	INCHES
										SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	2.000
▽	0.000
□	4.000
◇	6.000
△	8.000
O	10.000

MACH	PARAMETRIC VALUES				
	0.380	BETA	0.005	DATASET	AILRON
INCIDW	0.000	DIHDRL	7.660	EN2465	0.000
RUDDER	0.000	ELEVTR	0.000	EN2485	20.000
WNGPOS	1.000				

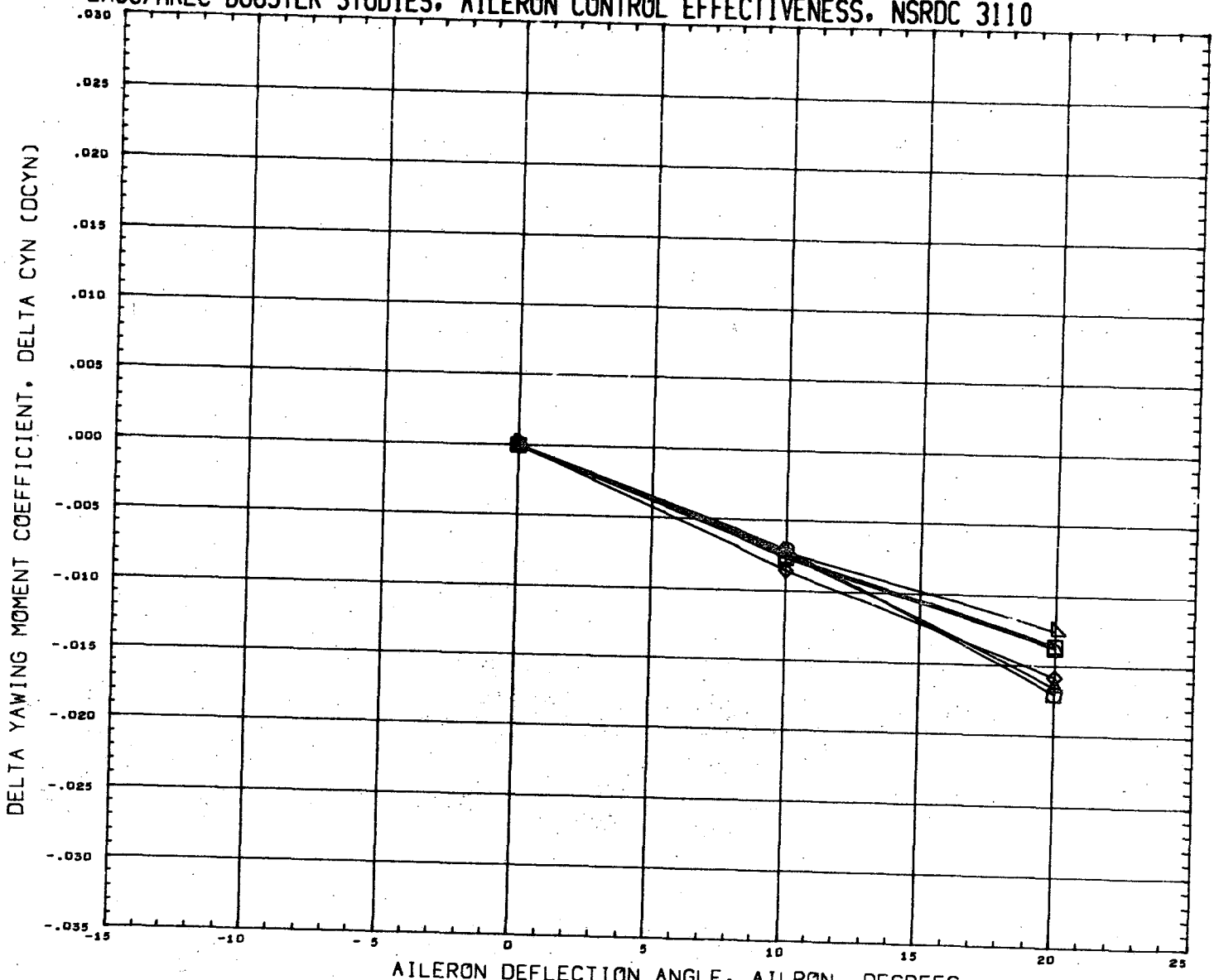
DATA HIST. CODE I*C

DATA SOURCE: DATASET AILRON 0.000 (EN2465); DATASET AILRON 10.000 (EN2481)

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1V1W1 (EN2465) 17 SEP 71 PAGE 2168

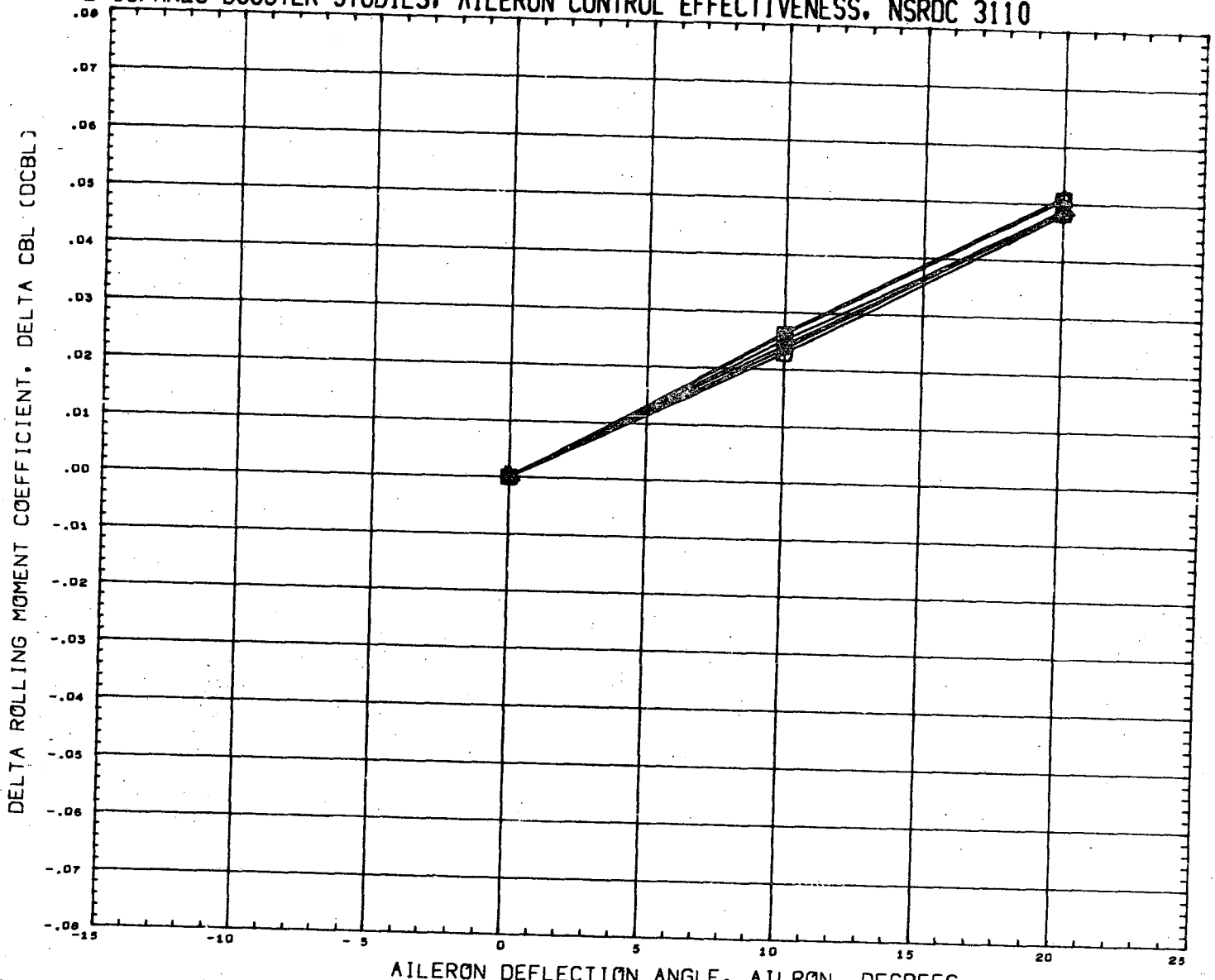
LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	- 2.000
□	0.000
◇	4.000
△	6.000
○	8.000
D	10.000

	PARAMETRIC VALUES				DATA SOURCE				REFERENCE INFORMATION		
MACH	0.380	BETA	0.001	DATASET	AILRON	DATASET	AILRON	SREF	1.3550	SQ.FT.
INCIDW	0.000	DIHDRL	7.660	EN2461	0.000	EN2489	10.000	LREF	41.4360	INCHES
RUDDER	0.000	ELEVTR	- 10.000	EN2493	20.000			BREF	41.4360	INCHES
WNGPOS	1.000							XMRP	31.1400	INCHES
								YMRP	0.0000	INCHES
DATA HIST. CODE	I#C							ZMRP	0.2250	INCHES
								SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
▽	0.000
◇	4.000
□	6.000
◸	8.000
○	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	0.001		
INCIDW	0.000	DIHDRL	7.660		
RUDDER	0.000	ELEVTR	-10.000		
WNGPOS	1.000				
DATA HIST. CODE	I*C				

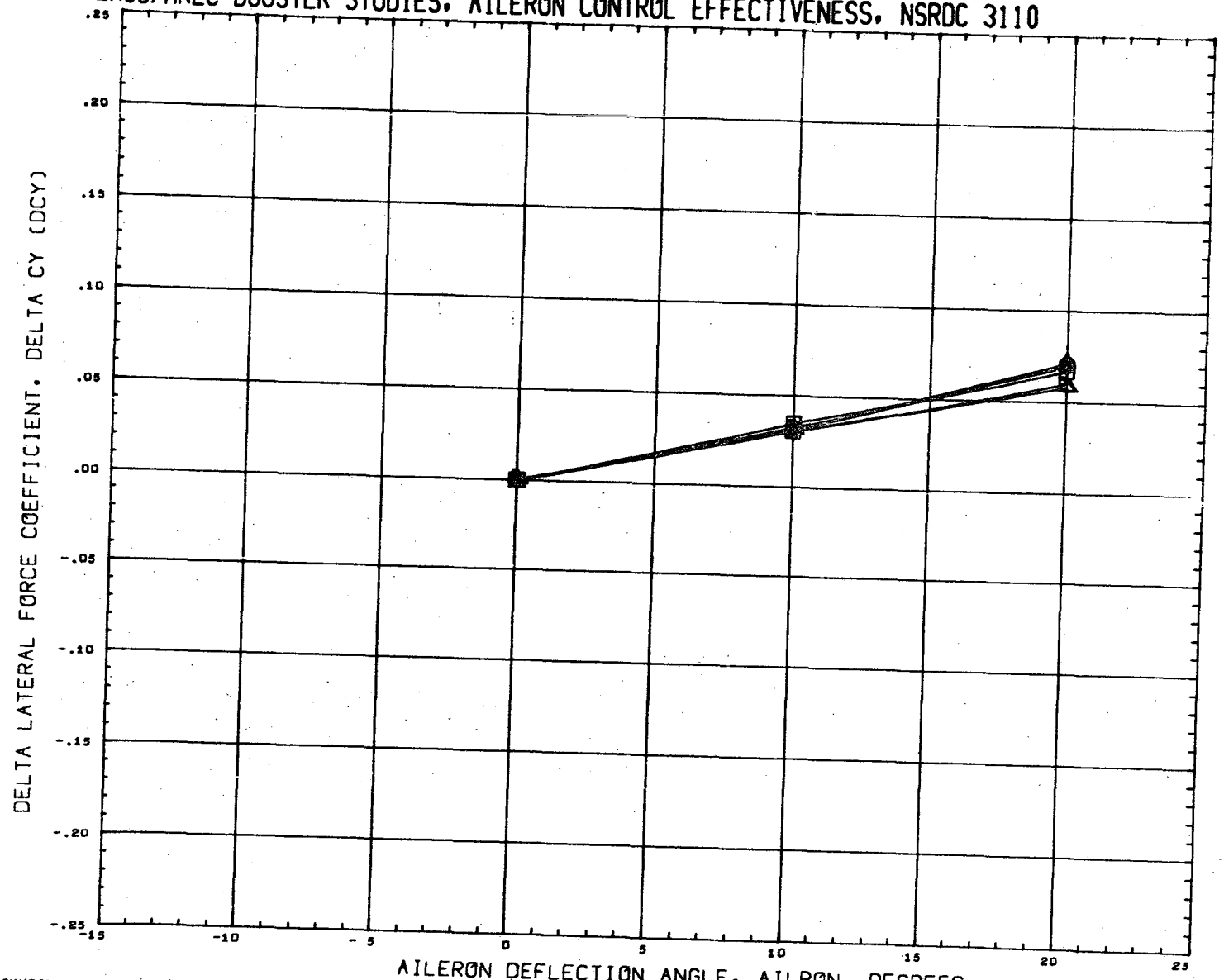
DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2461	0.000	EN2489	10.000
EN2493	20.000		

REFERENCE INFORMATION

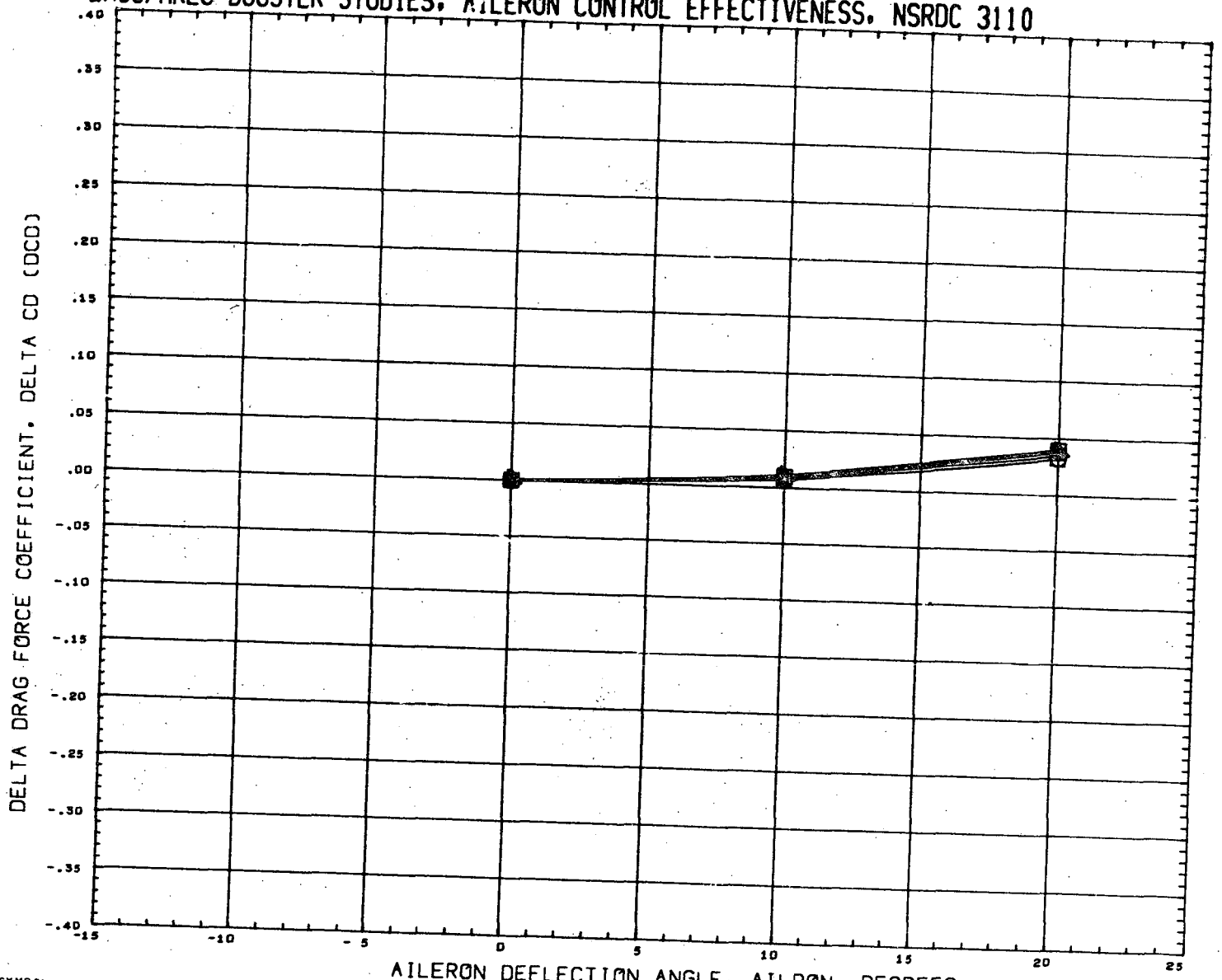
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
	- 2.000	MACH	0.380	BETA	0.001	DATASET	AILRON	DATASET	AILRON	SREF	1.3550	SQ.FT.
	0.000	INCIDW	0.000	DIHDRL	7.660	EN2461	0.000	EN2489	10.000	LREF	41.4360	INCHES
	4.000	RUDDER	0.000	ELEVTR	- 10.000	EN2493	20.000			BREF	41.4360	INCHES
	6.000	WNGPOS	1.000							XMRP	31.1400	INCHES
	8.000									YMRP	0.0000	INCHES
	10.000	DATA HIST. CODE	I*C							ZMRP	0.2250	INCHES
										SCALE	1.5000	PERCNT

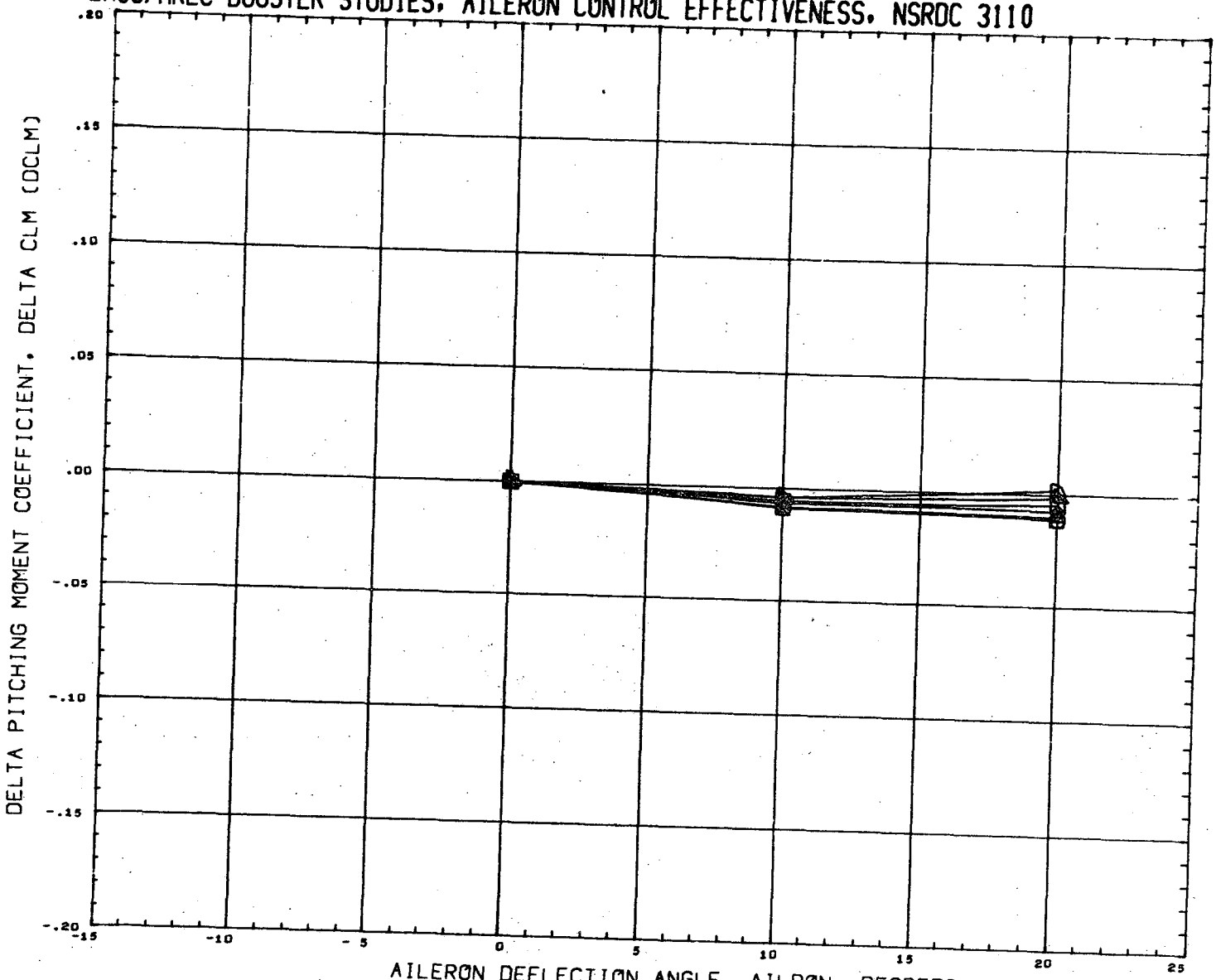
LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
⊠	10.000

	PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
MACH	0.380	BETA	0.001	DATASET	AILRON	DATASET	AILRON	SREF	1.3550	SQ.FT.
INCIDW	0.000	DIHDRL	7.660	EN2461	0.000	EN2489	10.000	LREF	41.4360	INCHES
RUDDER	0.000	ELEVTR	-10.000	EN2493	20.000			BREF	41.4360	INCHES
WNGPOS	1.000							XMRP	31.1400	INCHES
								YMRP	0.0000	INCHES
DATA HIST. CODE	I#C							ZMRP	0.2250	INCHES
								SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
▽	-2.000
△	0.000
◇	4.000
□	6.000
◸	8.000
▷	10.000

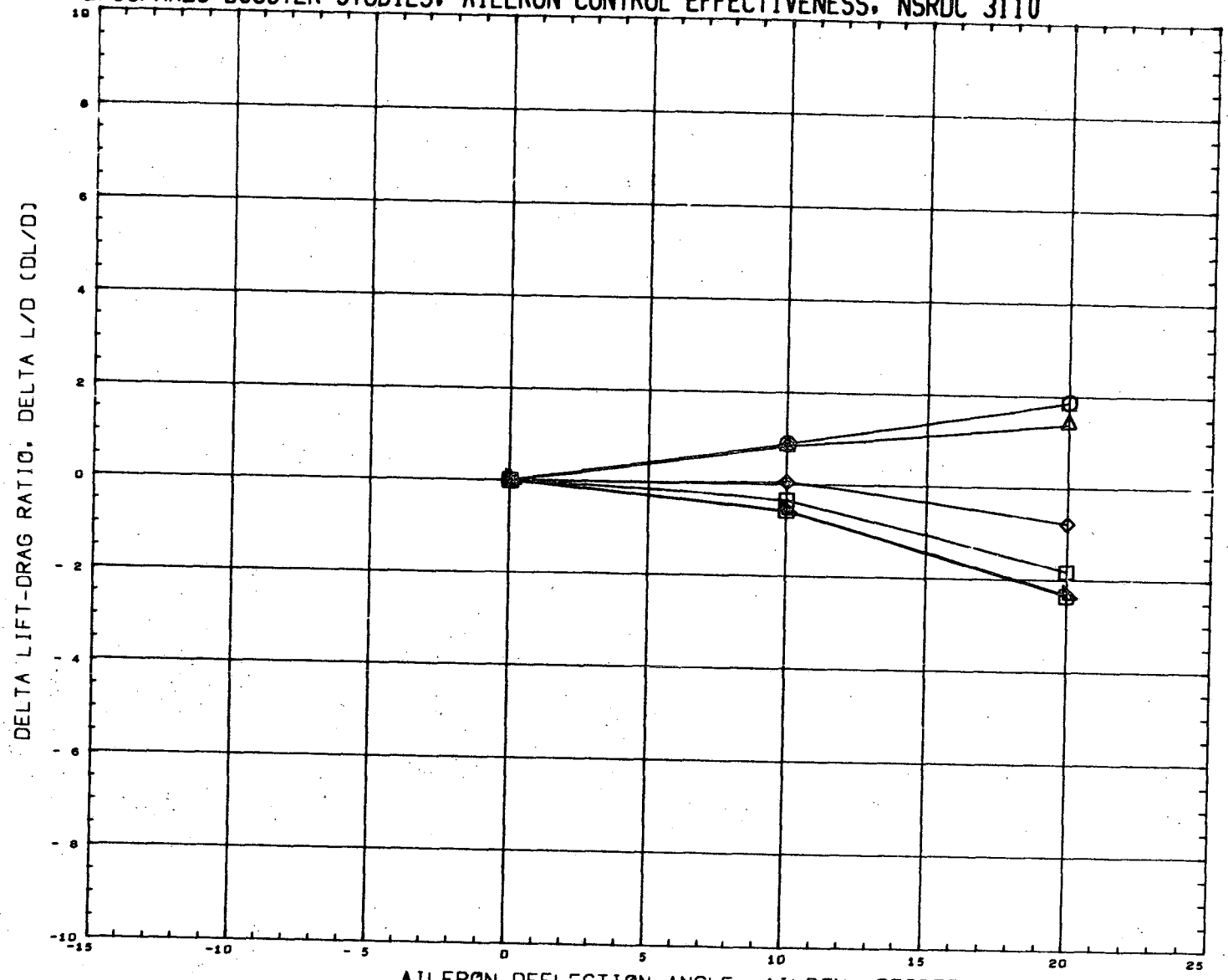
PARAMETRIC VALUES					
MACH	0.380	BETA	0.001		
INCIDW	0.000	DIHDRL	7.660		
RUDDER	0.000	ELEVTR	-10.000		
WNGPOS	1.000				
DATA HIST. CODE	I#C				

DATA SOURCE			
DATASET	AILRON	DATASET	AILRON
EN2461	0.000	EN2489	10.000
EN2493	20.000		

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1V1W1 (EN2461) 17 SEP 71 PAGE 2173

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
○	2.000
△	0.000
◇	4.000
□	6.000
▽	8.000
⬡	10.000

MACH	0.380	BETA	0.001	DATASET	AILRON
INCIDW	0.000	DIHDRL	7.660	EN2461	0.000
RUDDER	0.000	ELEVTR	-10.000	EN2493	20.000
WNGPOS	1.000				

PARAMETRIC VALUES

DATA SOURCE

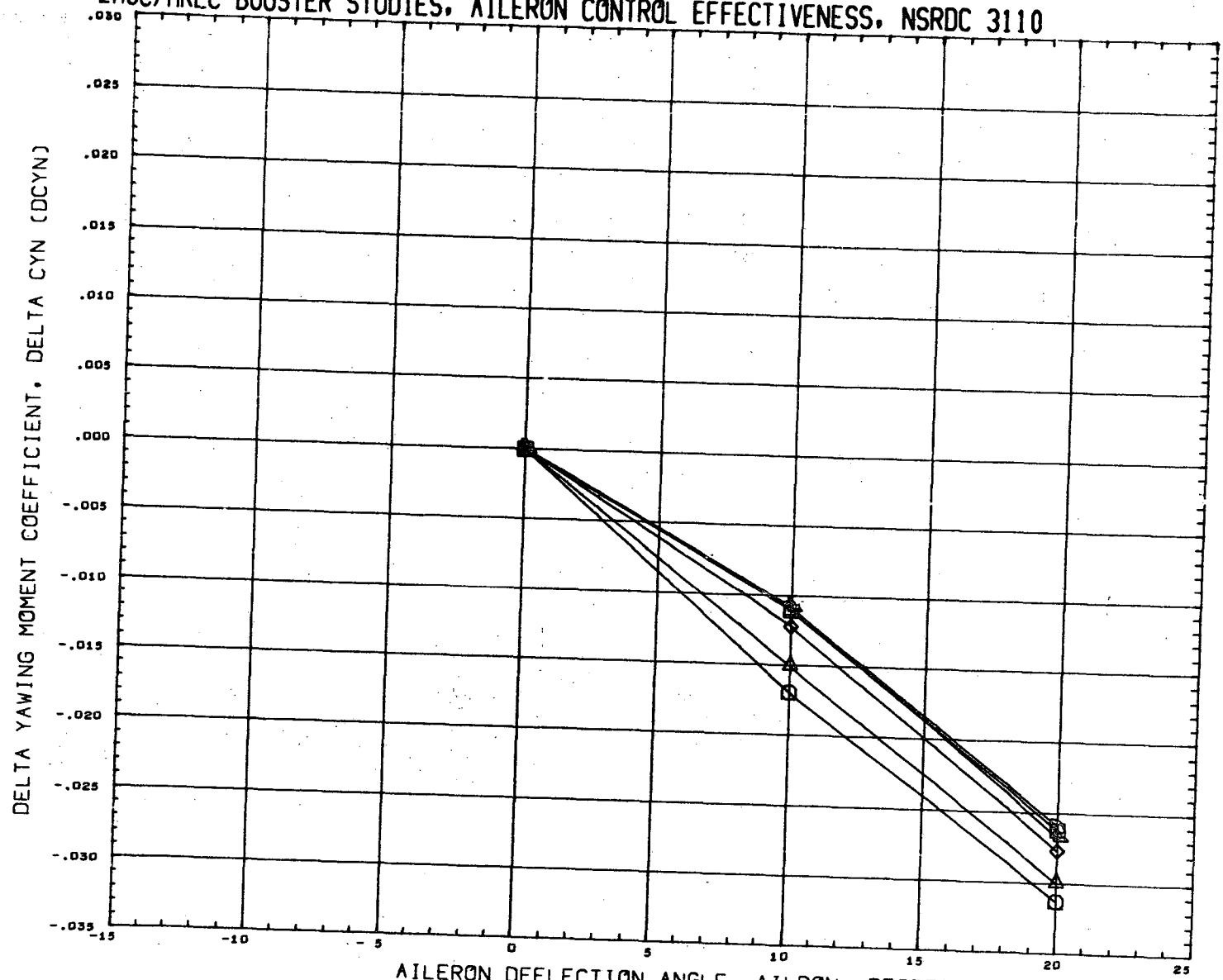
DATASET	AILRON
EN2489	10.000

DATA HIST. CODE I*C

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

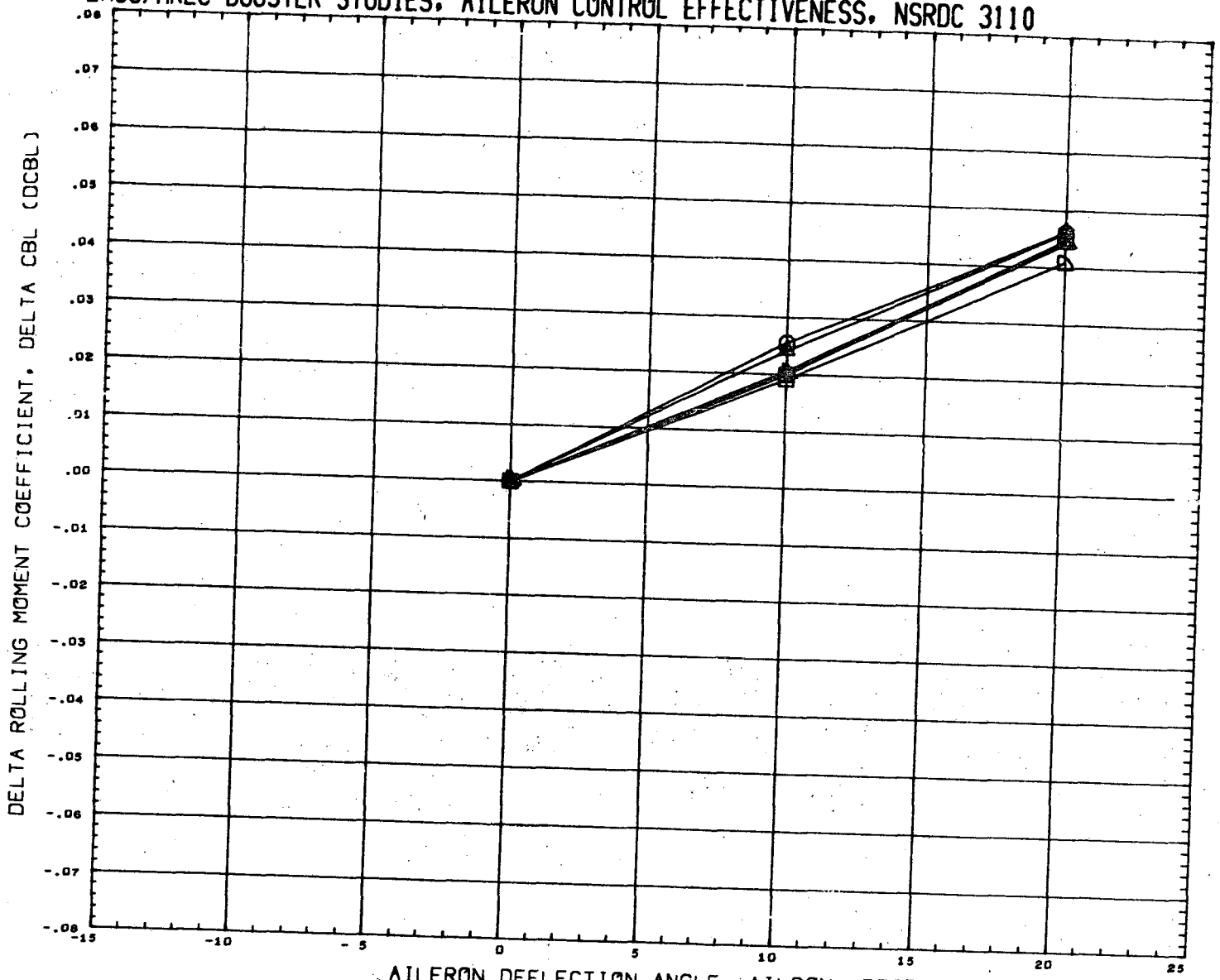
LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
	- 2.000	MACH	0.380	BETA	- 0.025	DATASET	AILRON	DATASET	AILRON	SREF	1.3550	SQ.FT.
	0.000	INCIDW	0.000	DIHDRL	7.660	EN2469	0.000	EN2497	10.000	LREF	41.4360	INCHES
	4.000	RUDDER	0.000	ELEVTR	10.000	EN2501	20.000			BREF	41.4360	INCHES
	6.000	WNGPOS	1.000							XMRP	31.1400	INCHES
	8.000									YMRP	0.0000	INCHES
	10.000	DATA HIST. CODE	I*C							ZMRP	0.2250	INCHES
										SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1V1W1 (EN2469) 17 SEP 71 PAGE 2175

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	-2.000
◇	0.000
□	4.000
◇	6.000
D	8.000
	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.025	DATASET	AILRON
INCIDW	0.000	DIHDRL	7.660	EN2469	0.000
RUDDER	0.000	ELEVTR	10.000	EN2501	20.000
WNGPOS	1.000				

DATA HIST. CODE I*C

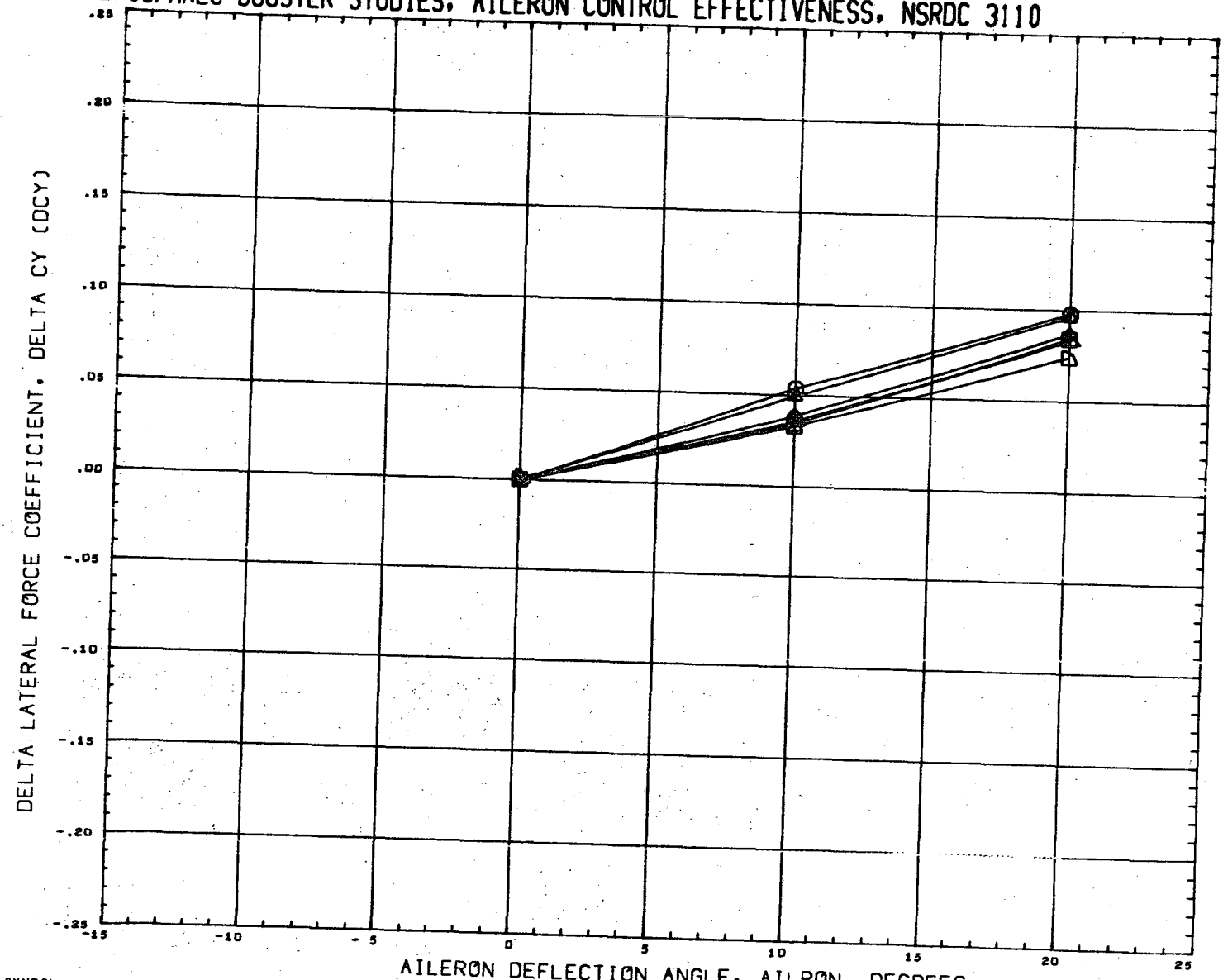
DATA SOURCE

DATASET	AILRON
EN2497	10.000

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
▷	2.000
◇	0.000
□	4.000
◁	6.000
○	8.000
△	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	- 0.025		
INCIDW	0.000	DIHDRL	7.660		
RUDDER	0.000	ELEVTR	10.000		
WNGPOS	1.000				

DATA HIST. CODE I#C

DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2469	0.000	EN2497	10.000
EN2501	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

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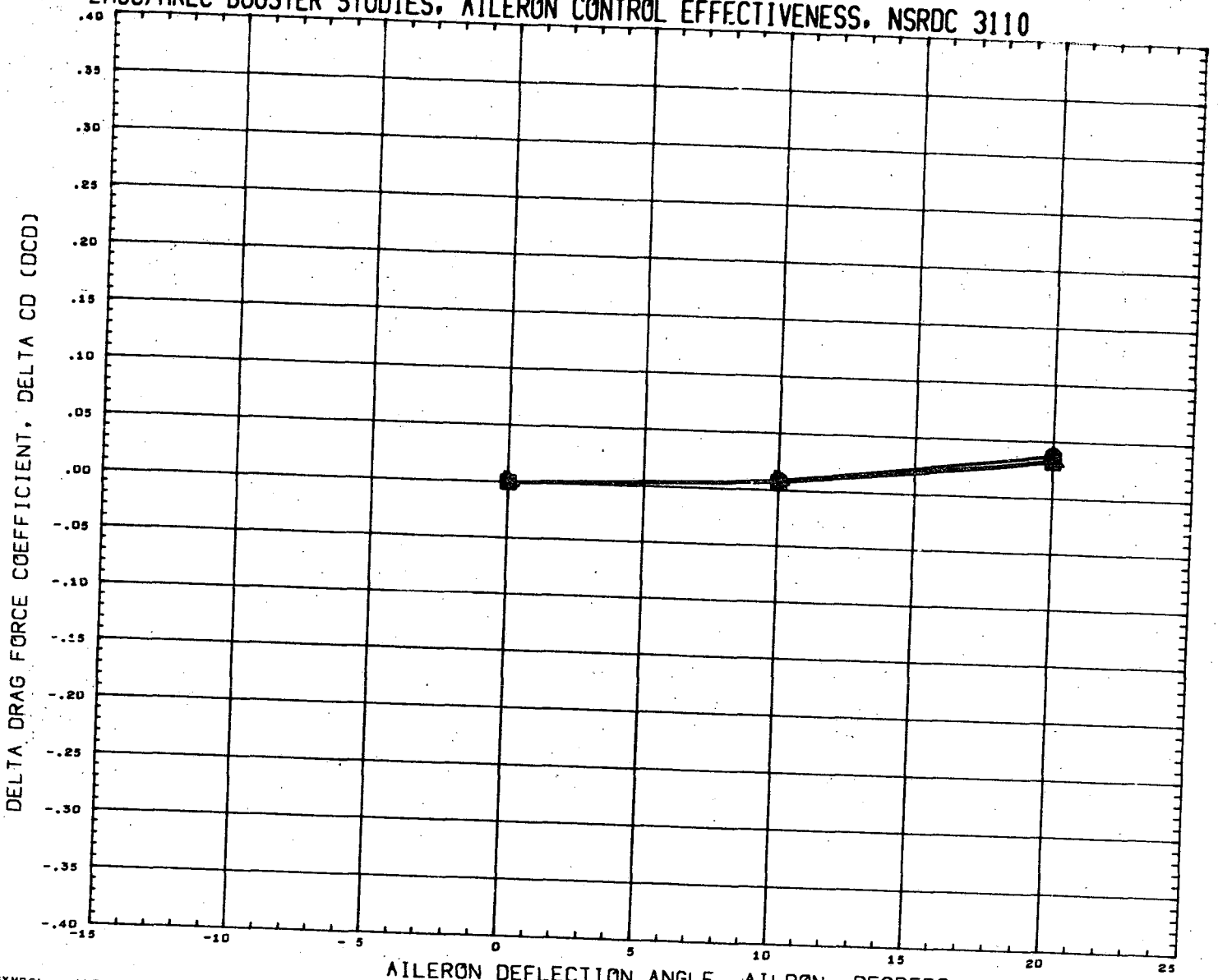
LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
D	-2.000
◻	0.000
◇	4.000
△	6.000
○	8.000
	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.025	DATASET	AILRON
INCIDW	0.000	DIHDRL	7.660	EN2469	0.000
RUDDER	0.000	ELEVTR	10.000	EN2501	20.000
WNGFOS	1.000				

DATA SOURCE

DATASET	AILRON	DATASET	AILRON
EN2497	10.000		

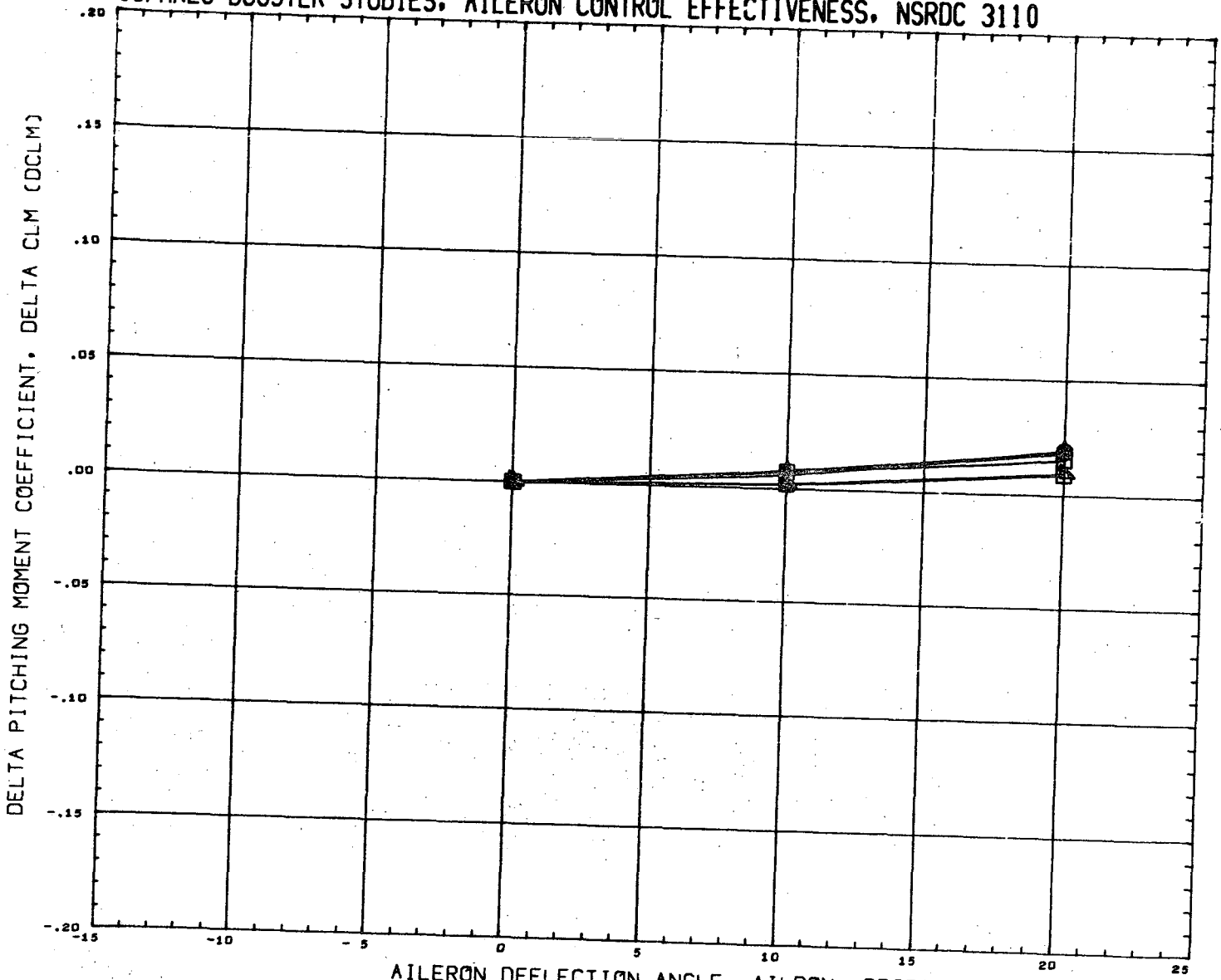
DATA HIST. CODE I*C

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1V1W1 (EN2469) 17 SEP 71 PAGE 2178

LMSC/HREC BOOSTER STUDIES. AILERON CONTROL EFFECTIVENESS. NSRDC 3110



SYMBOL	ALPHA
D	-2.000
□	0.000
◇	4.000
△	6.000
○	8.000
	10.000

PARAMETRIC VALUES

MACH	0.380	BETA	-0.025		
INCIDW	0.000	DIHDRL	7.660		
RUDDER	0.000	ELEVTR	10.000		
WNGPOS	1.000				

DATA HIST. CODE I*C

DATA SOURCE

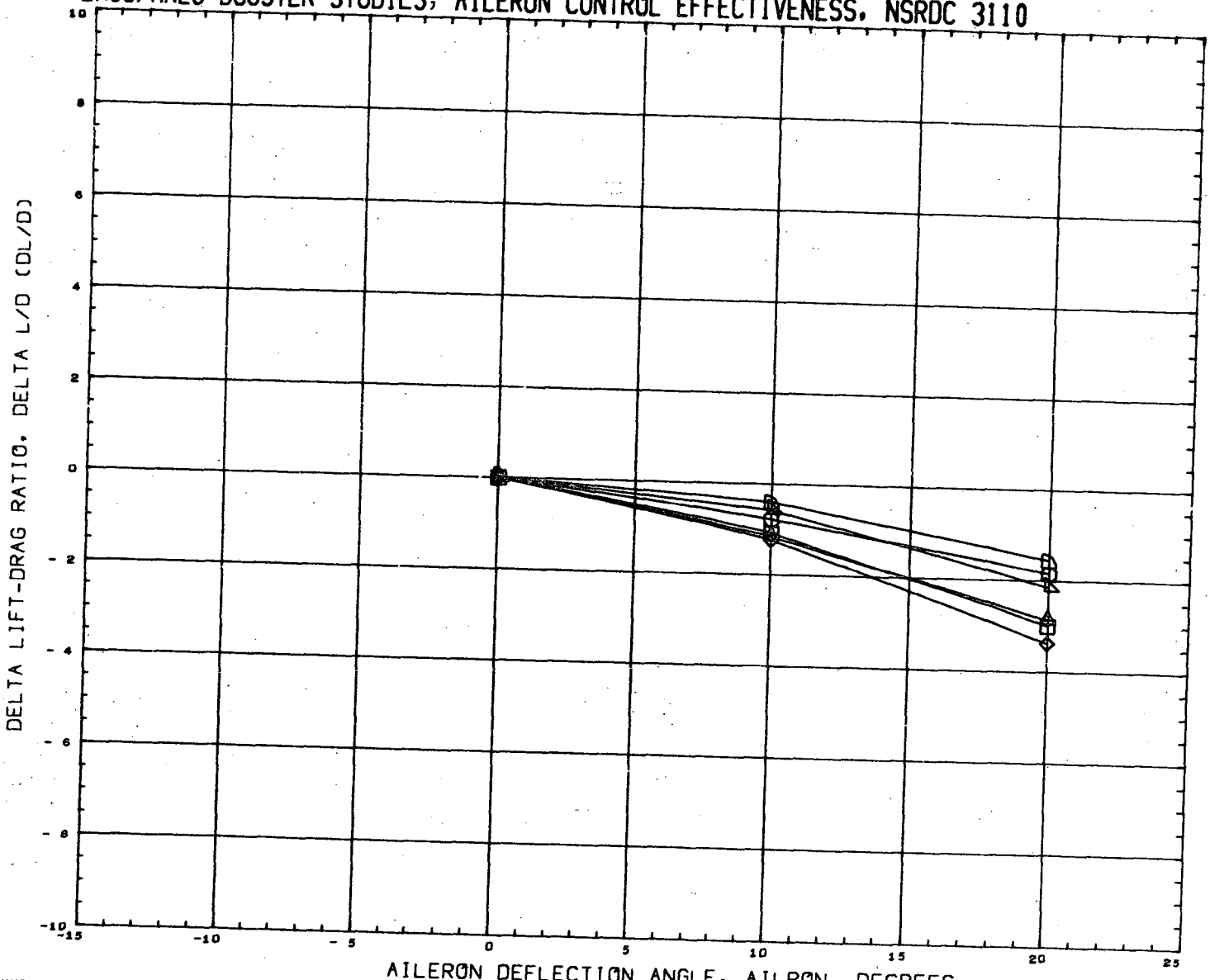
DATASET	AILRON	DATASET	AILRON
EN2469	0.000	EN2497	10.000
EN2501	20.000		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110. MSFC/LMSC BOOSTER B1V1W1 (EN2469) 17 SEP 71

LMSC/HREC BOOSTER STUDIES, AILERON CONTROL EFFECTIVENESS, NSRDC 3110



SYMBOL	ALPHA
○	- 2.000
△	0.000
◇	4.000
□	6.000
▽	8.000
▷	10.000

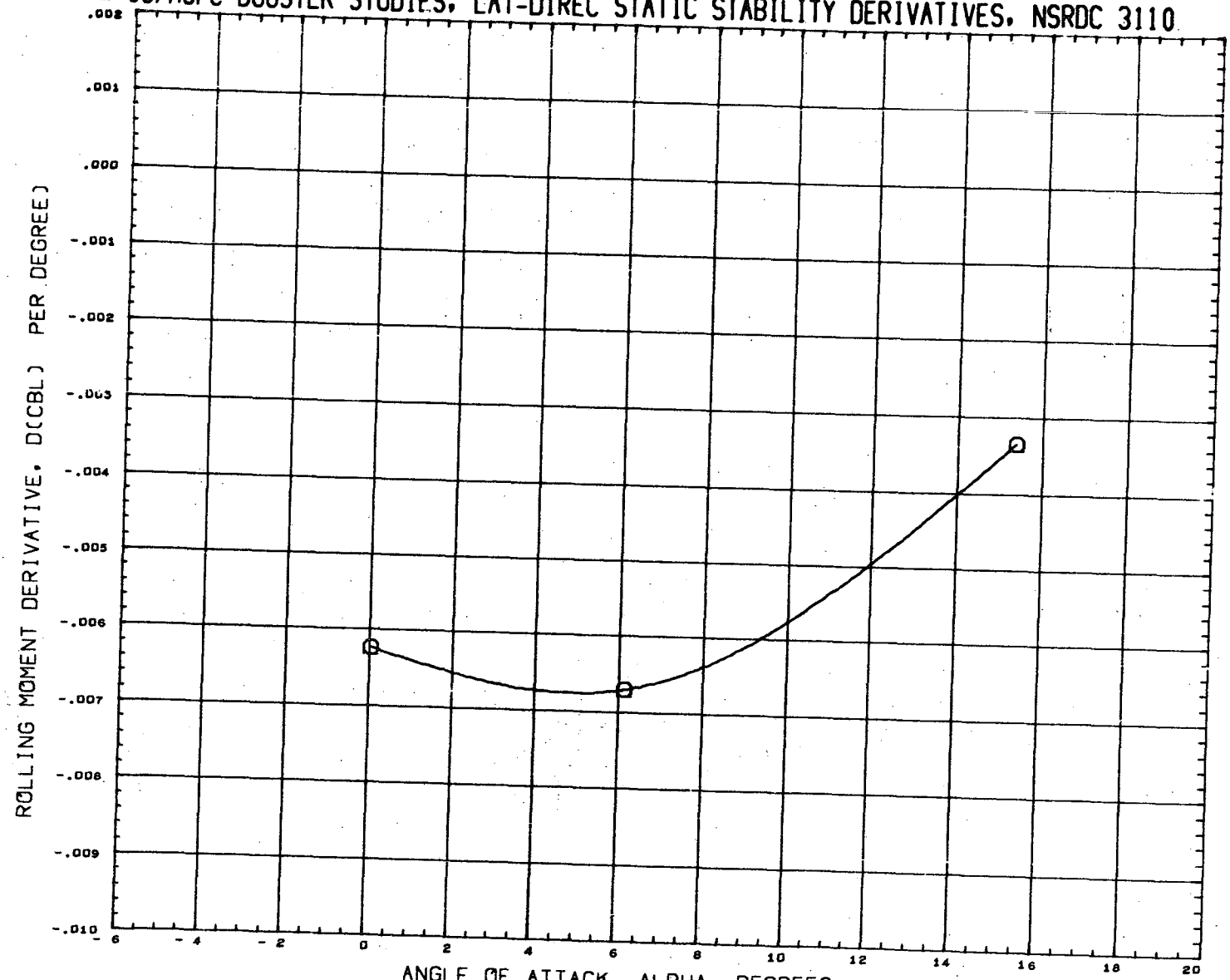
PARAMETRIC VALUES					
MACH	0.380	BETA	- 0.025		
INCIDW	0.000	DIHDRL	7.660		
RUDDER	0.000	ELEVTR	10.000		
WNGPOS	1.000				

DATA HIST. CODE I*C

DATA SOURCE			
DATASET	AILRON	DATASET	AILRON
EN2469	0.000	EN2497	10.000
EN2501	20.000		

REFERENCE INFORMATION		
SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL O MACH 0.360

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		

DATA HIST. CODE I

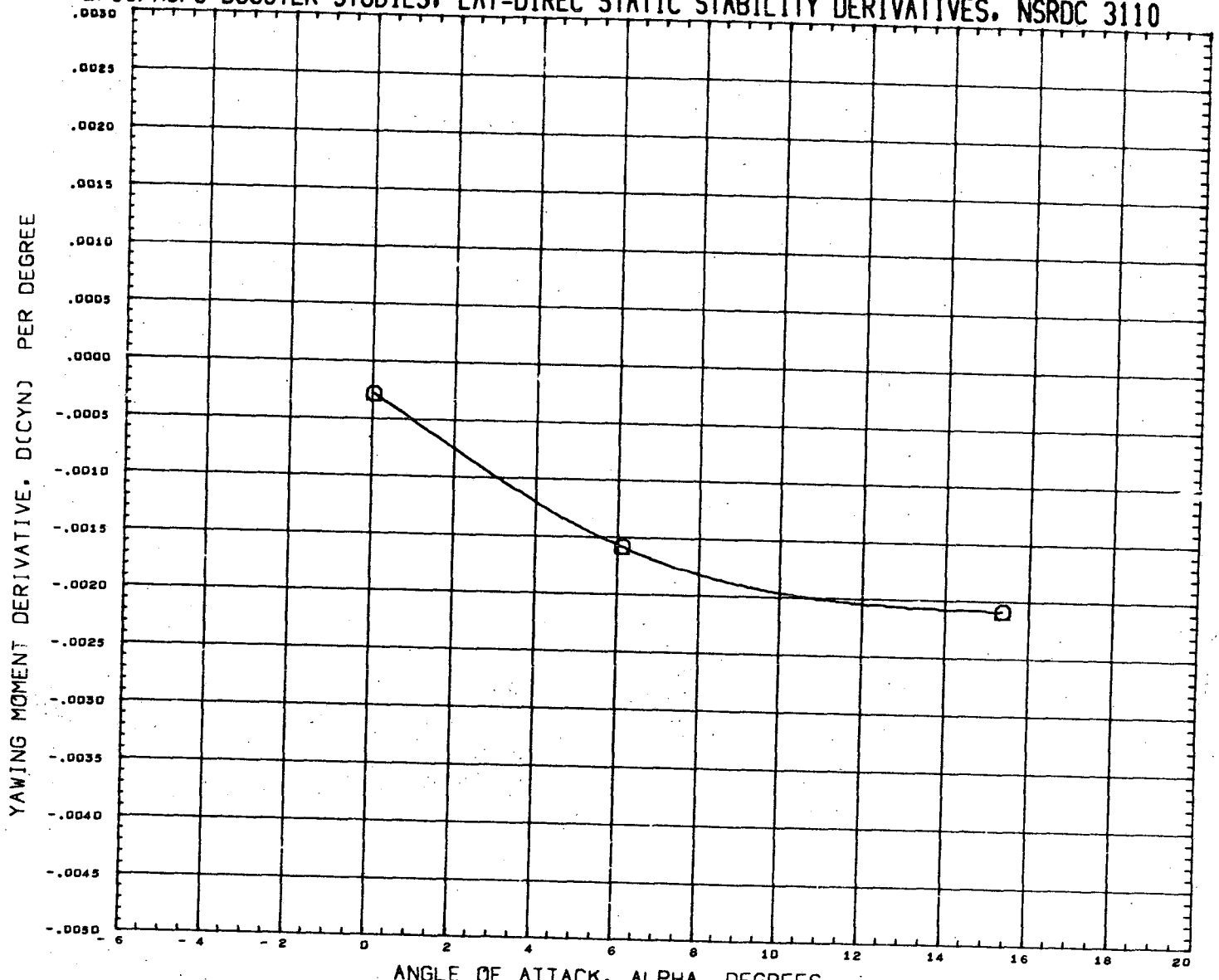
DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2002	0.033	FN2003	6.133
FN2004	15.392		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL: O MACH: 0.380

PARAMETRIC VALUES

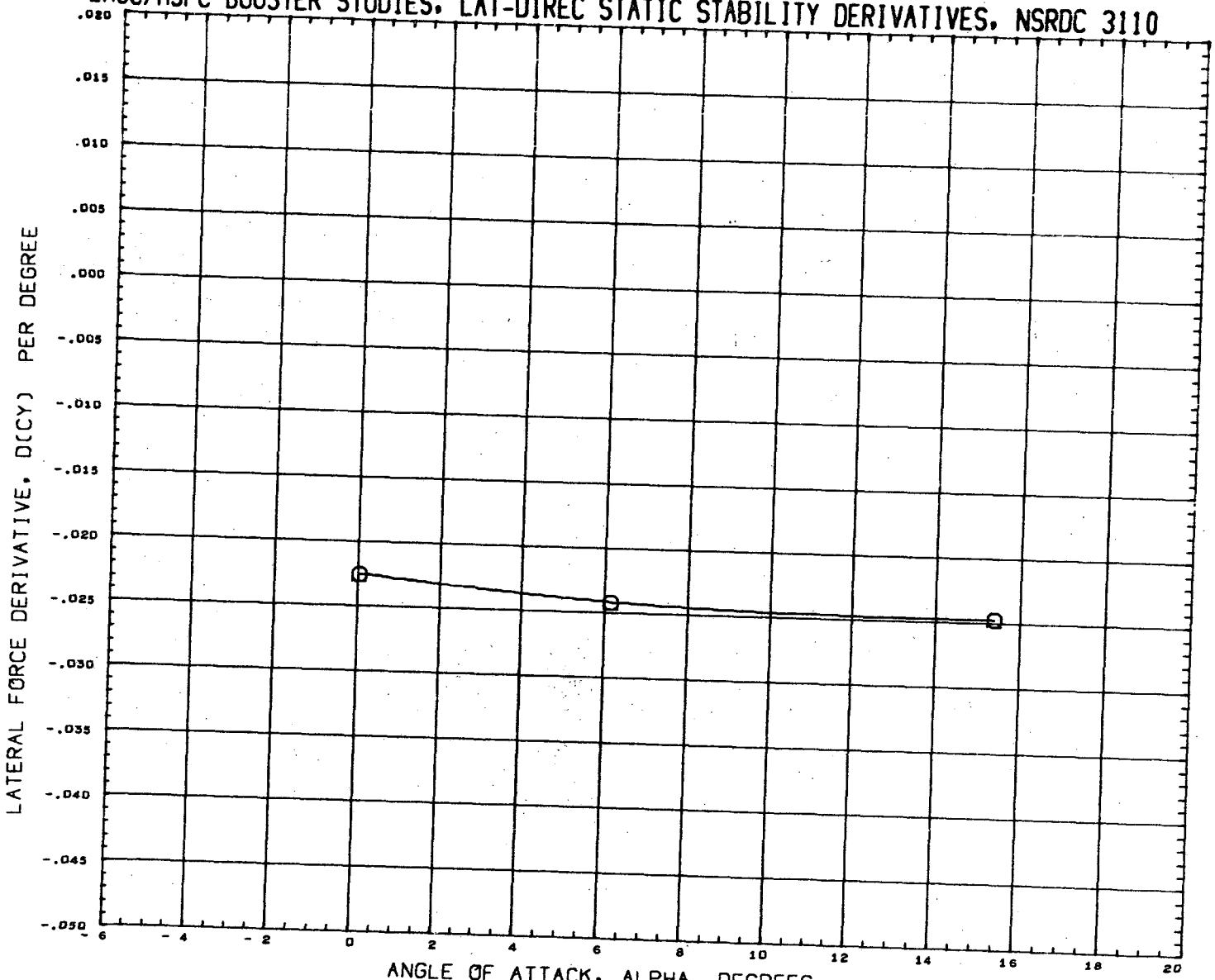
INCIDC	3.000	INCIDW	0.000	DATA SOURCE				
DIHDRL	7.660	AILRON	0.000	DATASET	ALPHA	DATASET	ALPHA	
CANARD	0.000	ELEVTR	0.000	FN2002	0.033	FN2003	6.133	
RUDDER	0.000	WNGPOS	1.000	FN2004	15.392			
CNDPOS	1.000							

DATA HIST. CODE I

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL: O MACH: 0.360

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		

DATA HIST. CODE I

DATA SOURCE

DATASET	ALPHA
FN2002	0.033
FN2004	15.392

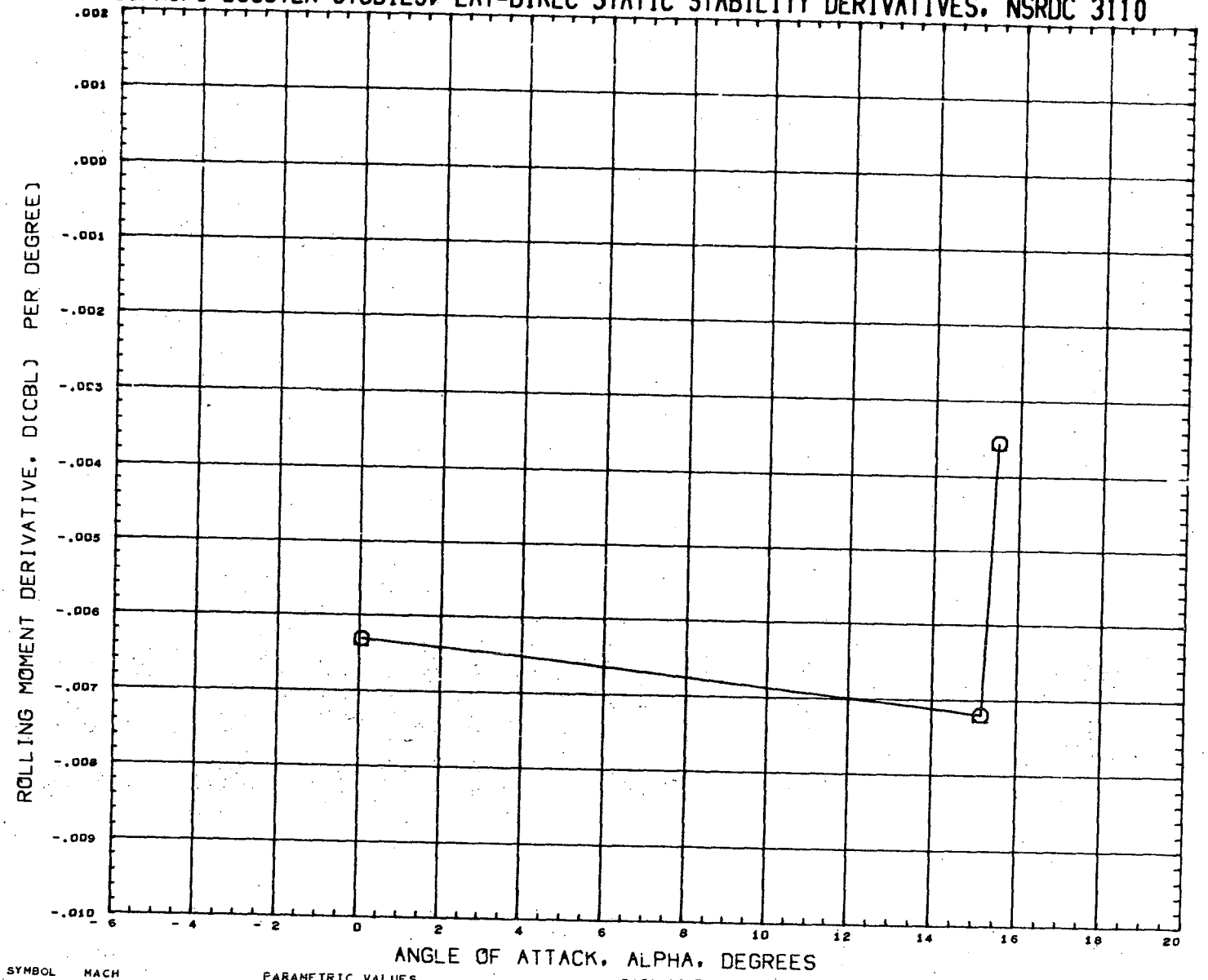
DATASET	ALPHA
FN2003	6.133

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (FN2002) 17 SEP 71 PAGE 2183

LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL: O MACH: 0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		

DATA HIST. CODE I

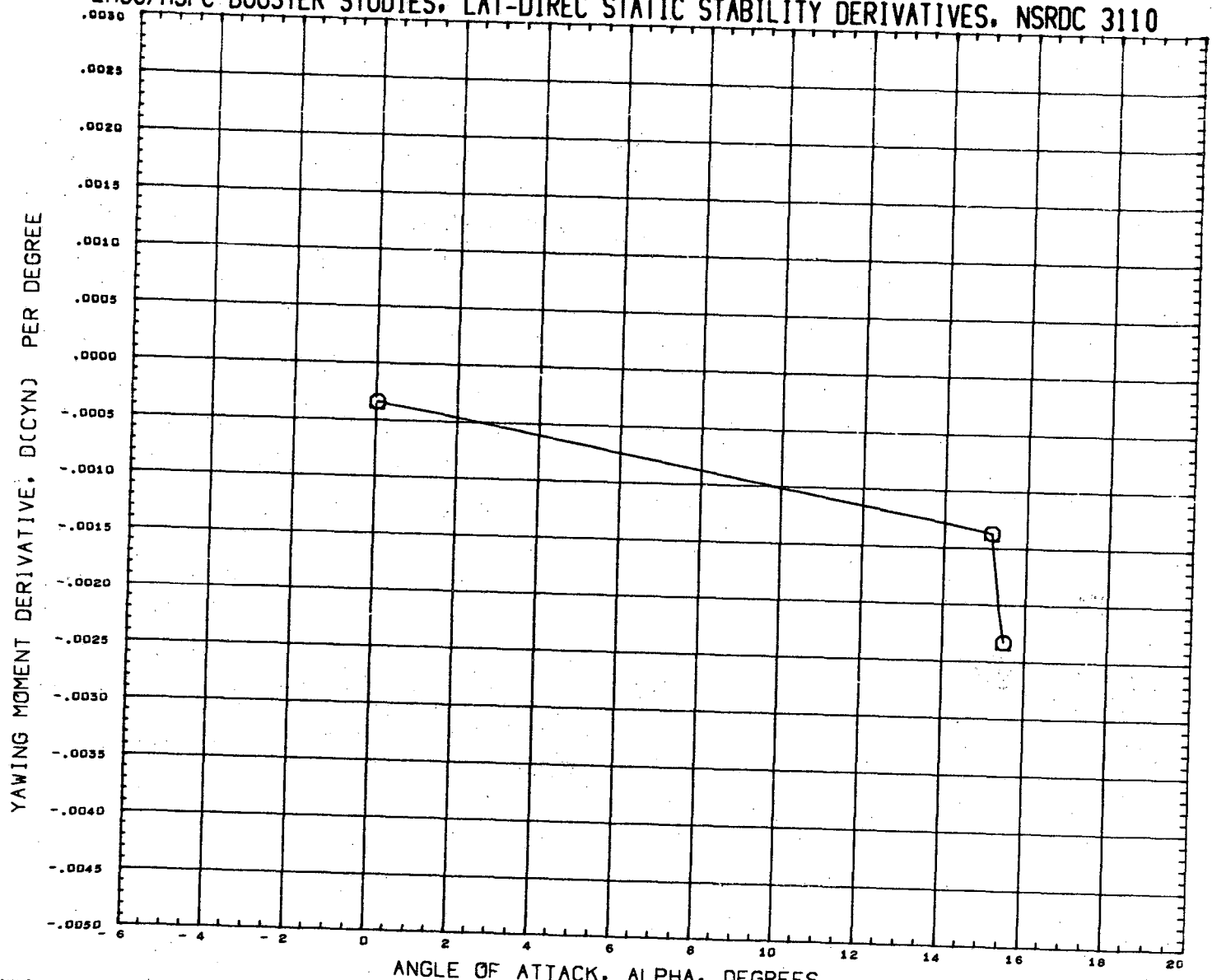
DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2066	0.048	FN2067	15.177
FN2068	15.509		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL O MACH 0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	AILRON	0.000		
CANARD	0.000	ELEVTR	0.000		
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				

DATA HIST. CODE I

DATA SOURCE

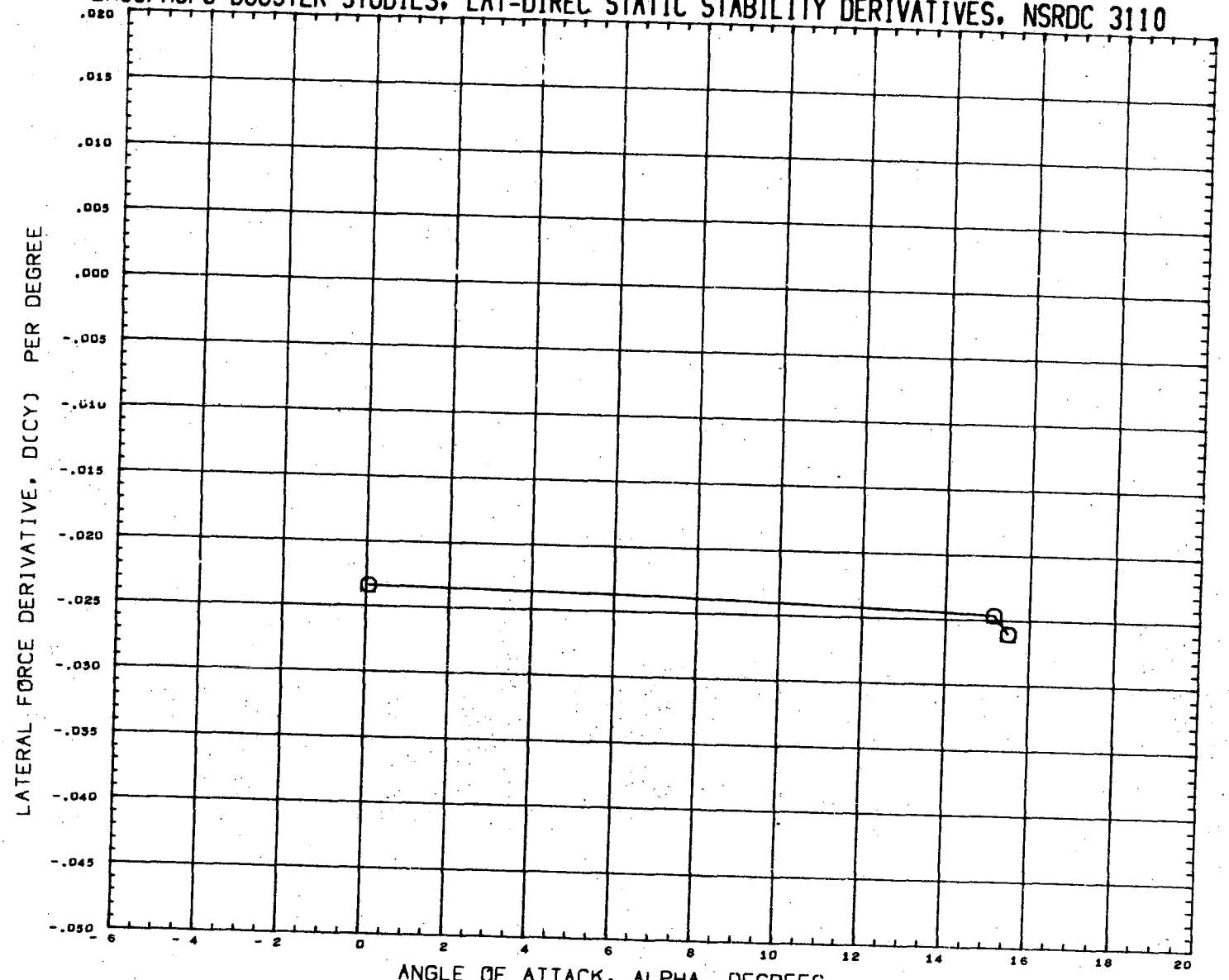
DATASET	ALPHA	DATASET	ALPHA
FN2066	0.048	FN2067	15.177
FN2068	15.509		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C1F1W1V1 (FN2066) 17 SEP 71 PAGE 2185

LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL	MACH
O	0.300

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	AILRON	0.000		
CANARD	0.000	ELEVTR	0.000		
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				

DATA HIST. CODE I

DATA SOURCE

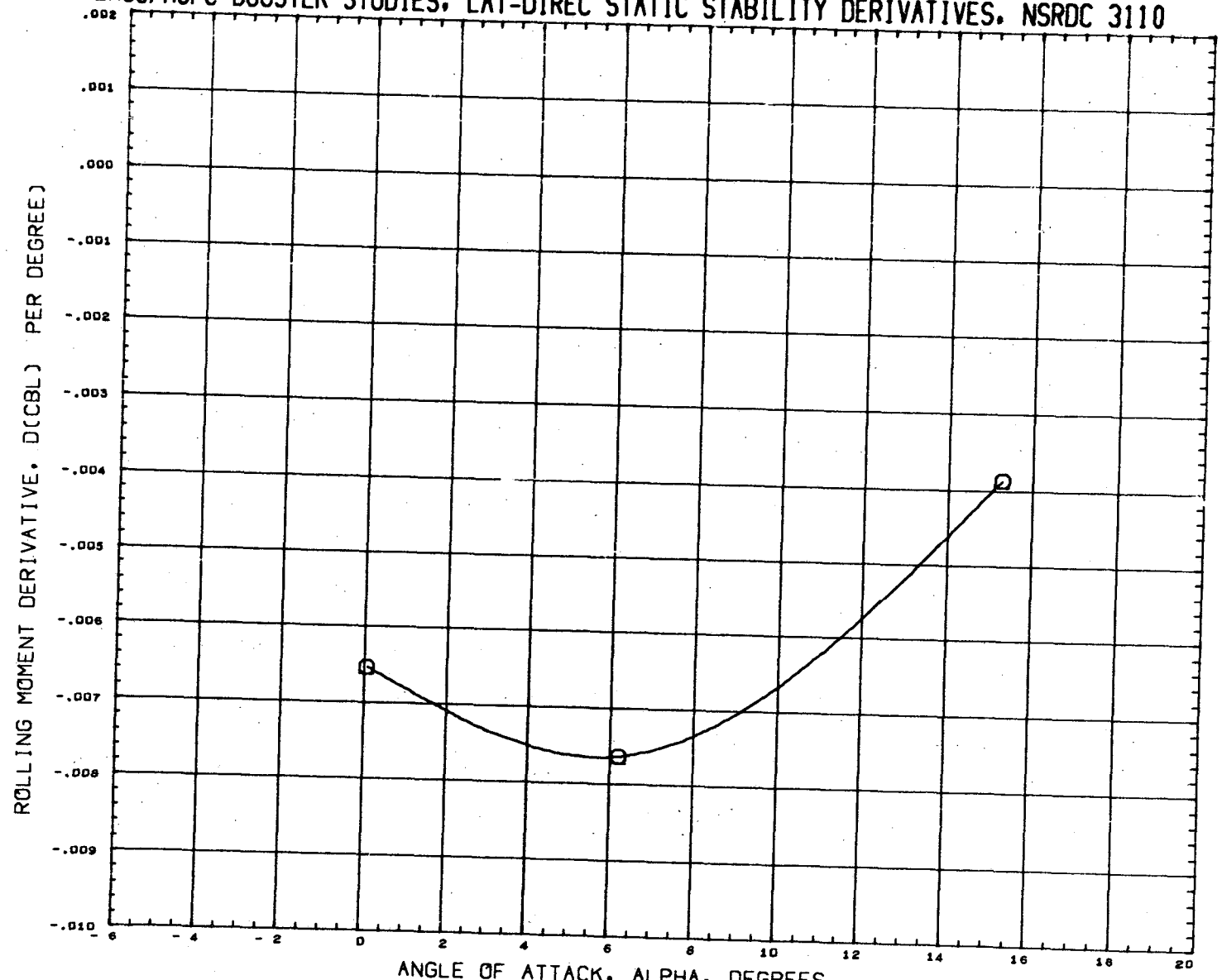
DATASET	ALPHA
FN2066	0.048
FN2068	15.509

DATASET	ALPHA
FN2067	15.177

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL	MACH
O	0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	2.000		

DATA HIST. CODE I

DATA SOURCE

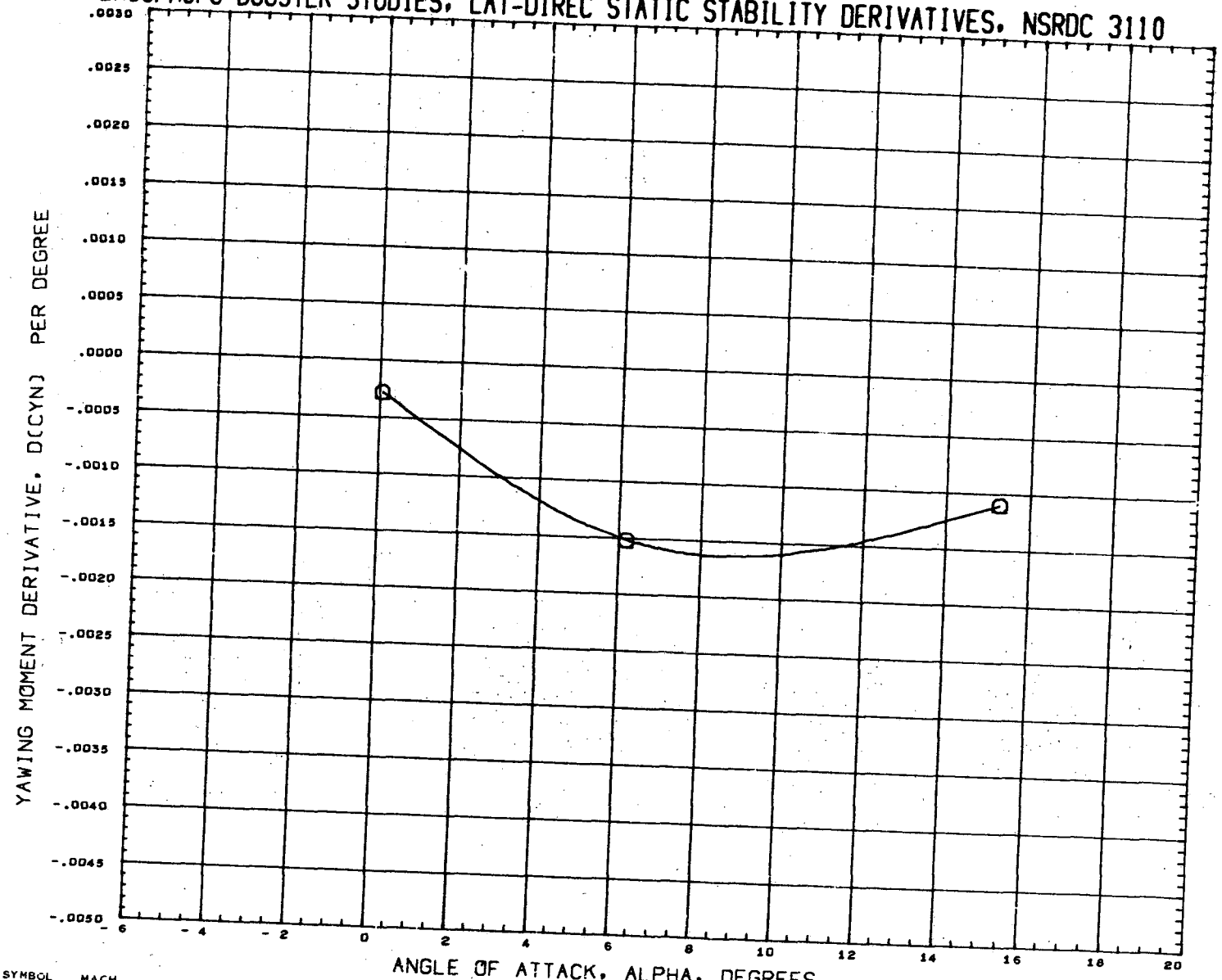
DATASET	ALPHA	DATASET	ALPHA
FN2010	0.065	FN2011	6.189
FN2012	15.287		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (FN2010) 17 SEP 71 PAGE 2187

LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL MACH

O 0.380

PARAMETRIC VALUES

INCIDC	3.00	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	2.000		

DATA HIST. CODE I

DATA SOURCE

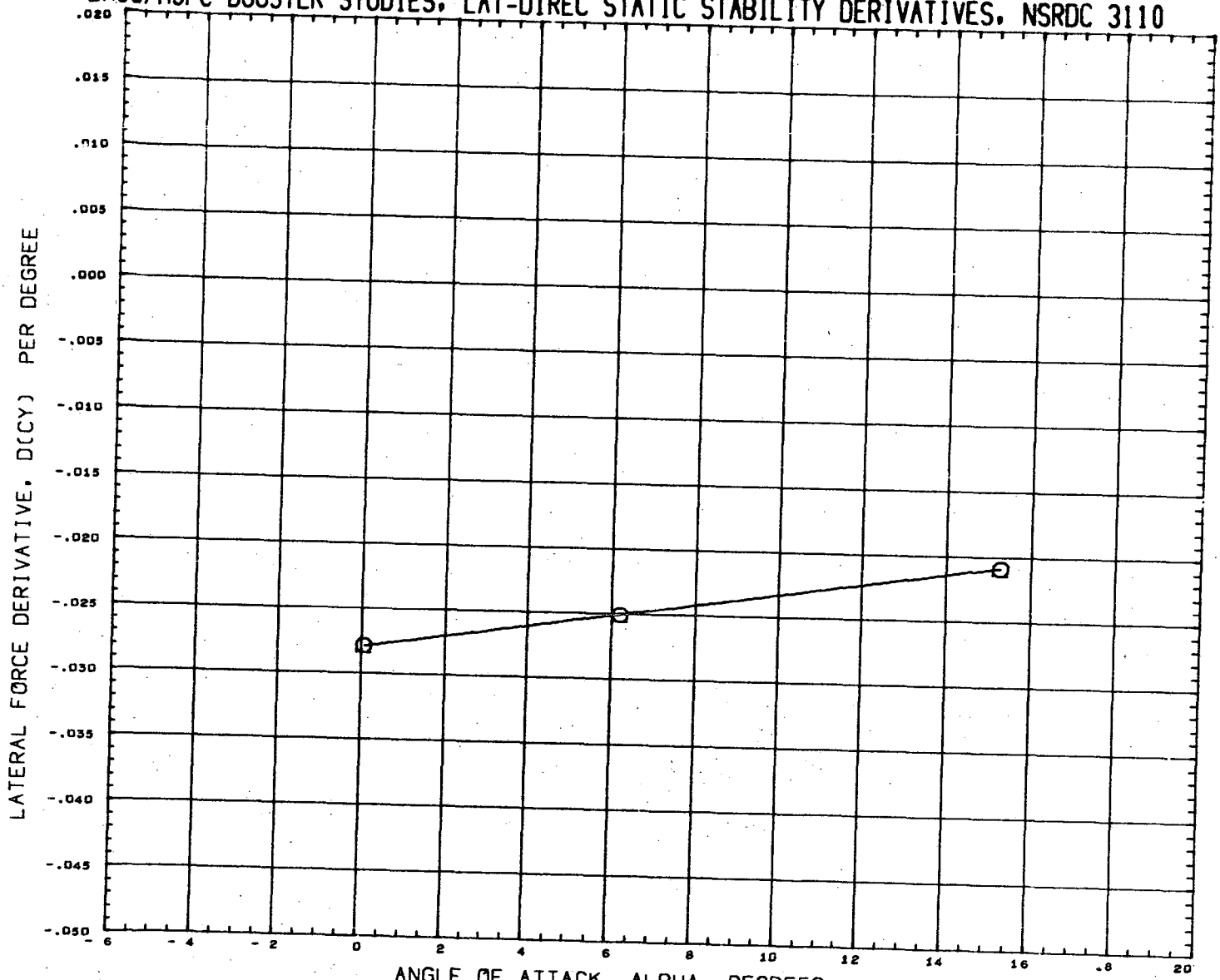
DATASET	ALPHA	DATASET	ALPHA
FN2010	0.065	FN2011	6.189
FN2012	15.267		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110,MSFC/LMSC BOOSTER B1C2F1W1V1 (FN2010) 17 SEP 71 PAGE 2188

LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL	MACH
O	0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	2.000		

DATA HIST. CODE I

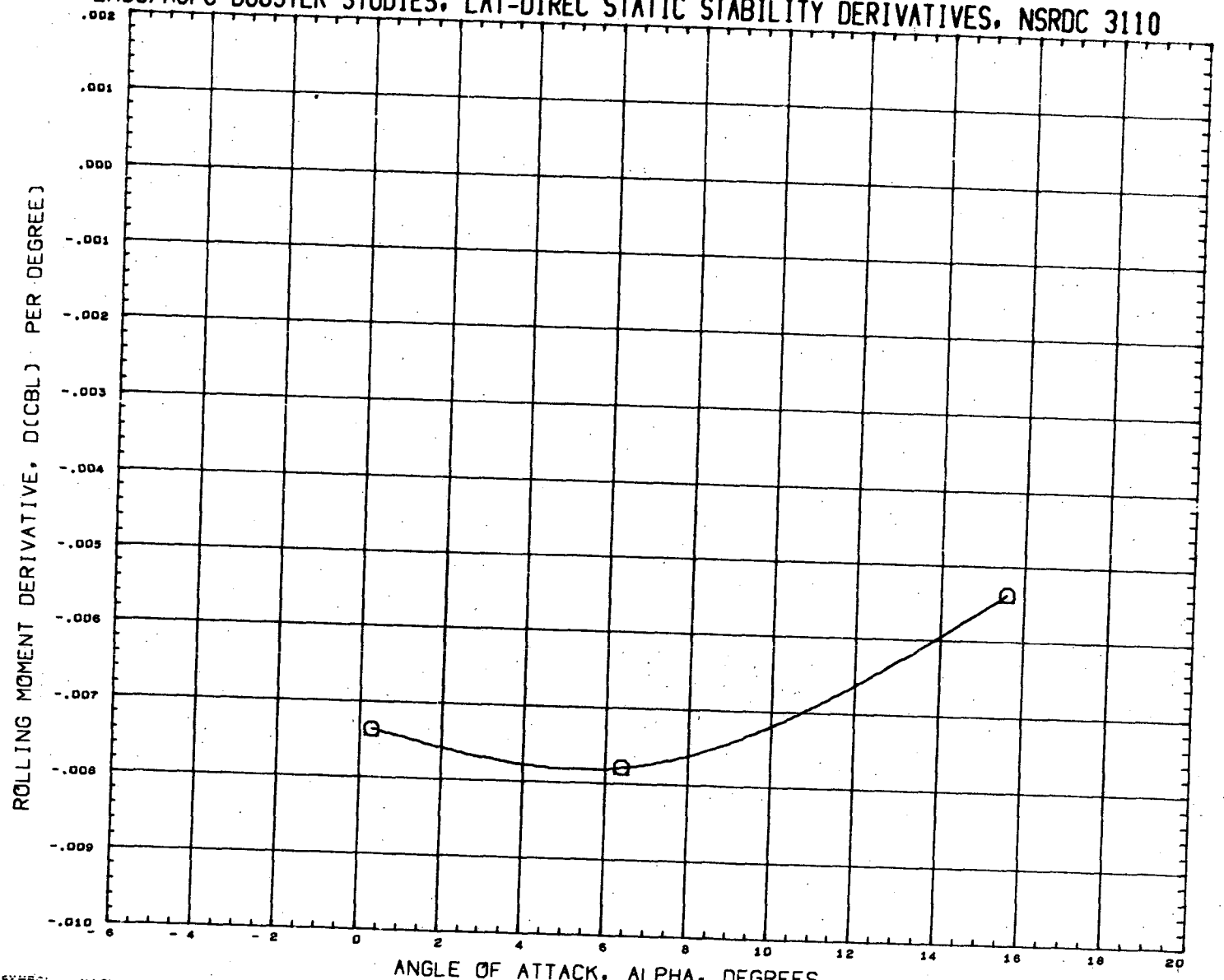
DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2010	0.065	FN2011	6.189
FN2012	15.287		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL	MACH
O	0.380

PARAMETRIC VALUES

INCIDC	15.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		

DATA HIST. CODE I

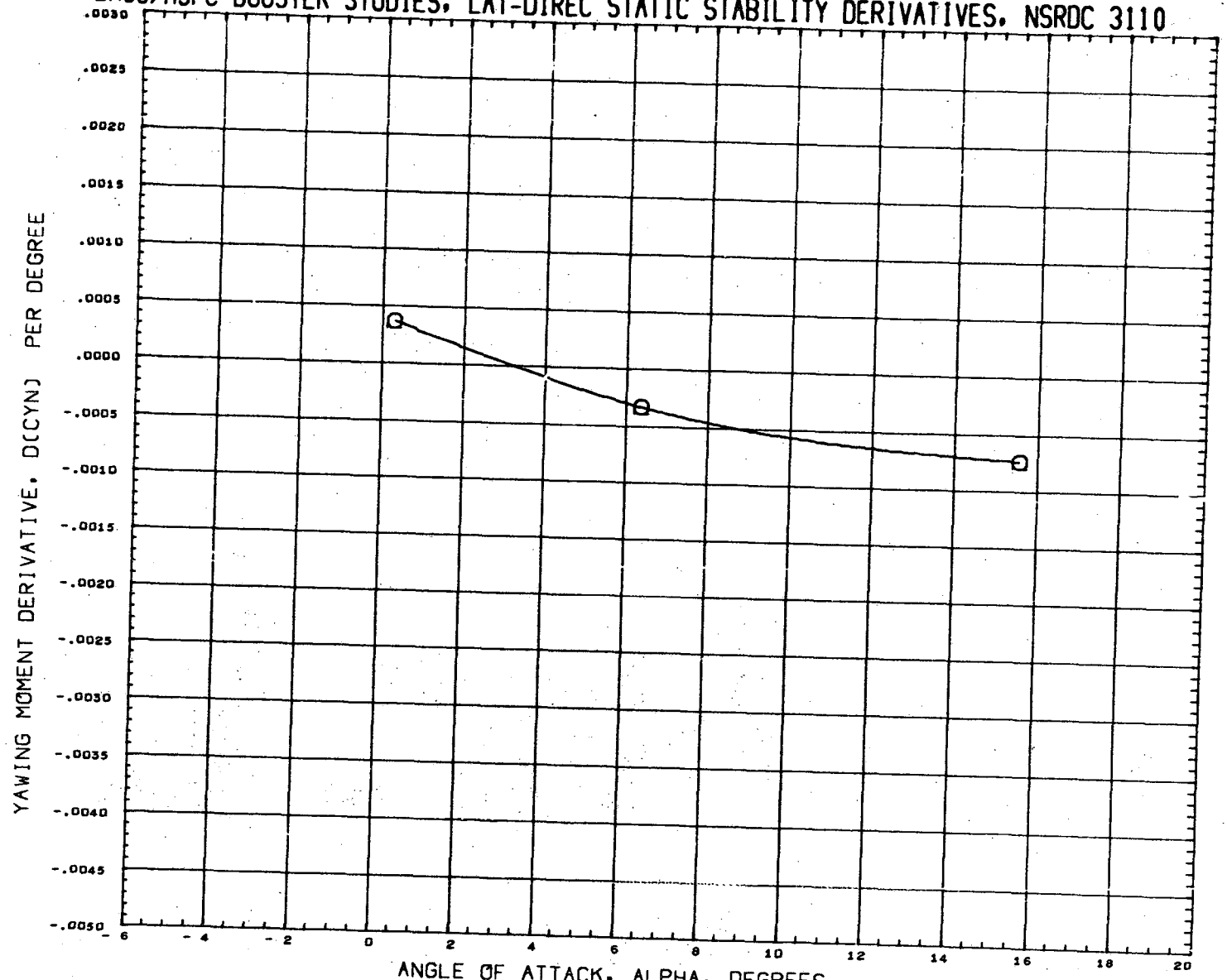
DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2006	0.290	FN2007	6.386
FN2008	15.596		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL	MACH
O	0.380

PARAMETRIC VALUES

INCIDC	15.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		

DATA HIST. CODE I

DATA SOURCE

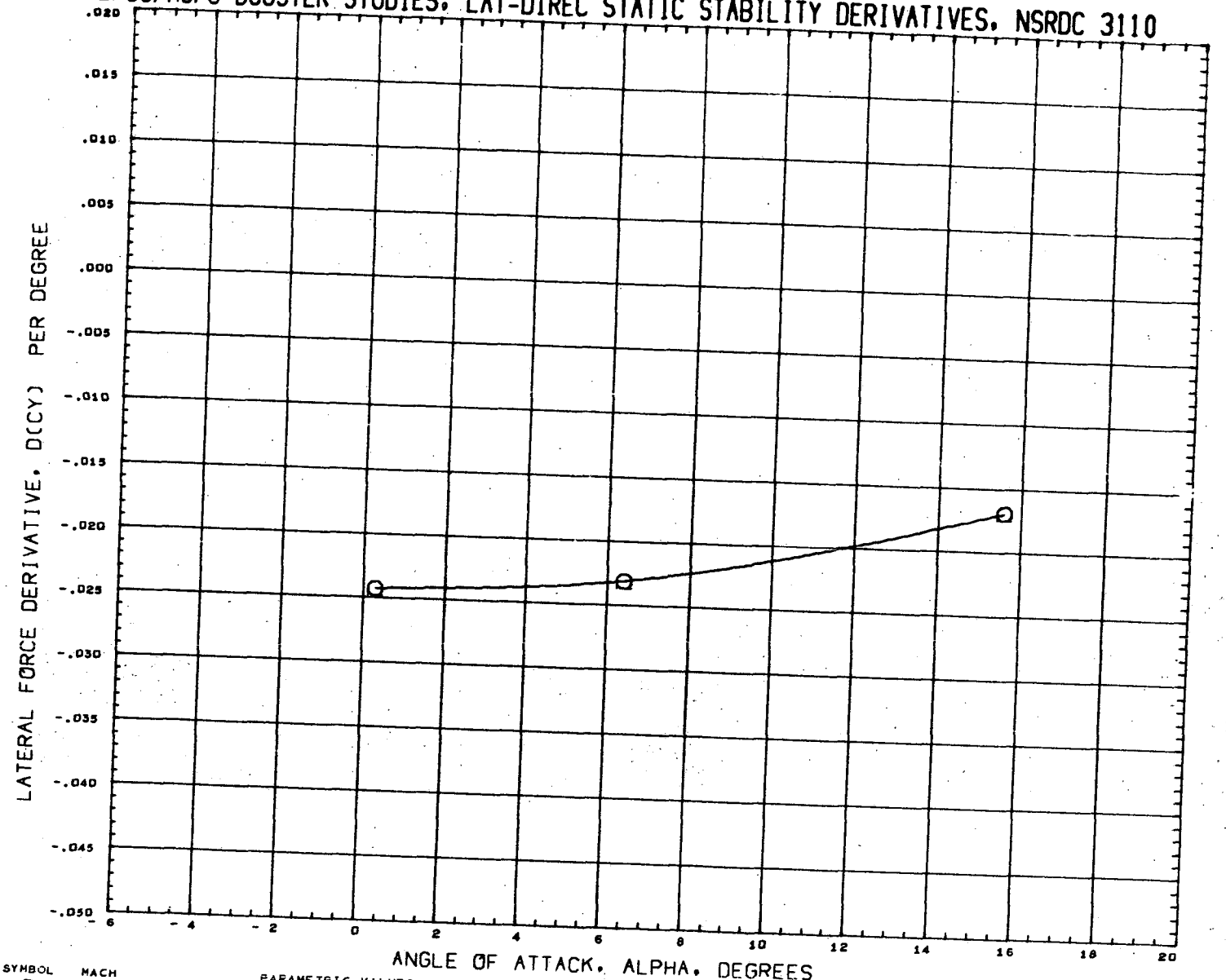
DATASET	ALPHA	DATASET	ALPHA
FN2006	0.290	FN2007	6.386
FN2008	15.596		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (FN2006) 17 SEP 71 PAGE 2191

LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL MACH
O 0.380

PARAMETRIC VALUES

INCIDC	15.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGFOS	1.000
CNDFOS	1.000		

DATA HIST. CODE I

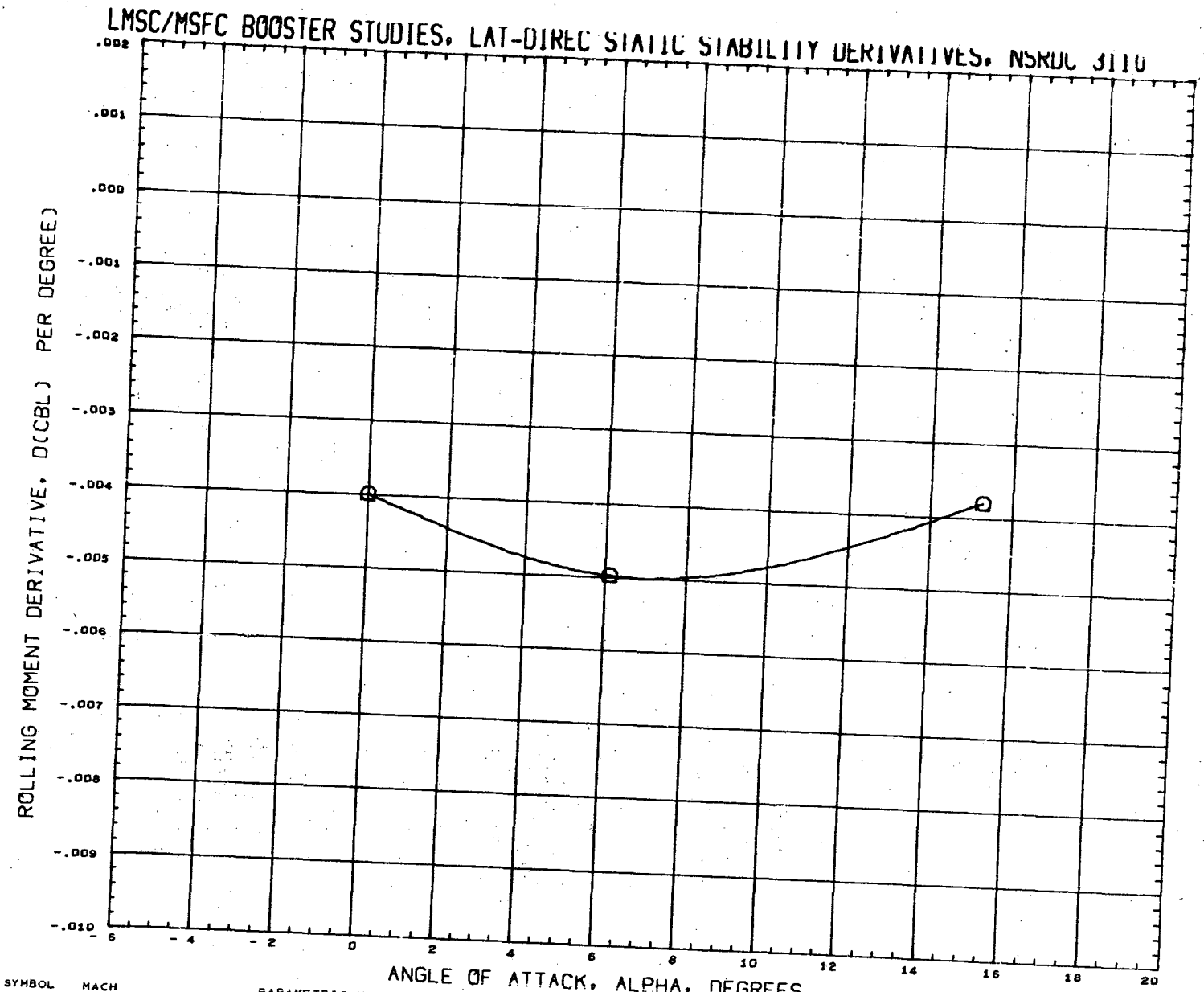
DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2006	0.290	FN2007	6.386
FN2008	15.596		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V1 (FN2006) 17 SEP 71 PAGE 2192



SYMBOL MACH

O 0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		

DATA HIST. CODE I

DATA SOURCE

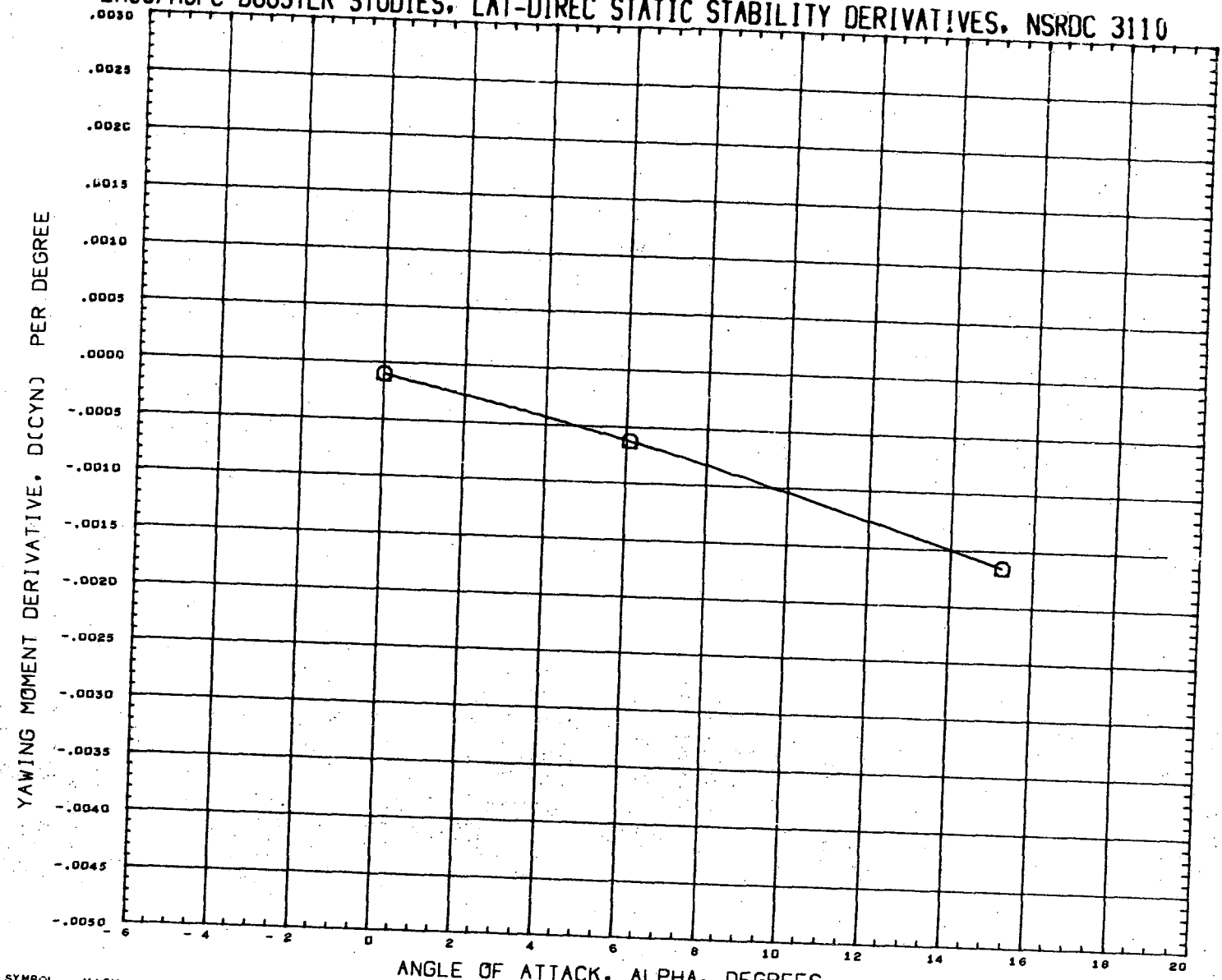
DATASET	ALPHA	DATASET	ALPHA
FN2194	0.007	FN2195	6.103
FN2196	15.277		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V2D1 (FN2194) 17 SEP 71 PAGE 2193

LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL O MACH 0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		

DATA HIST. CODE I

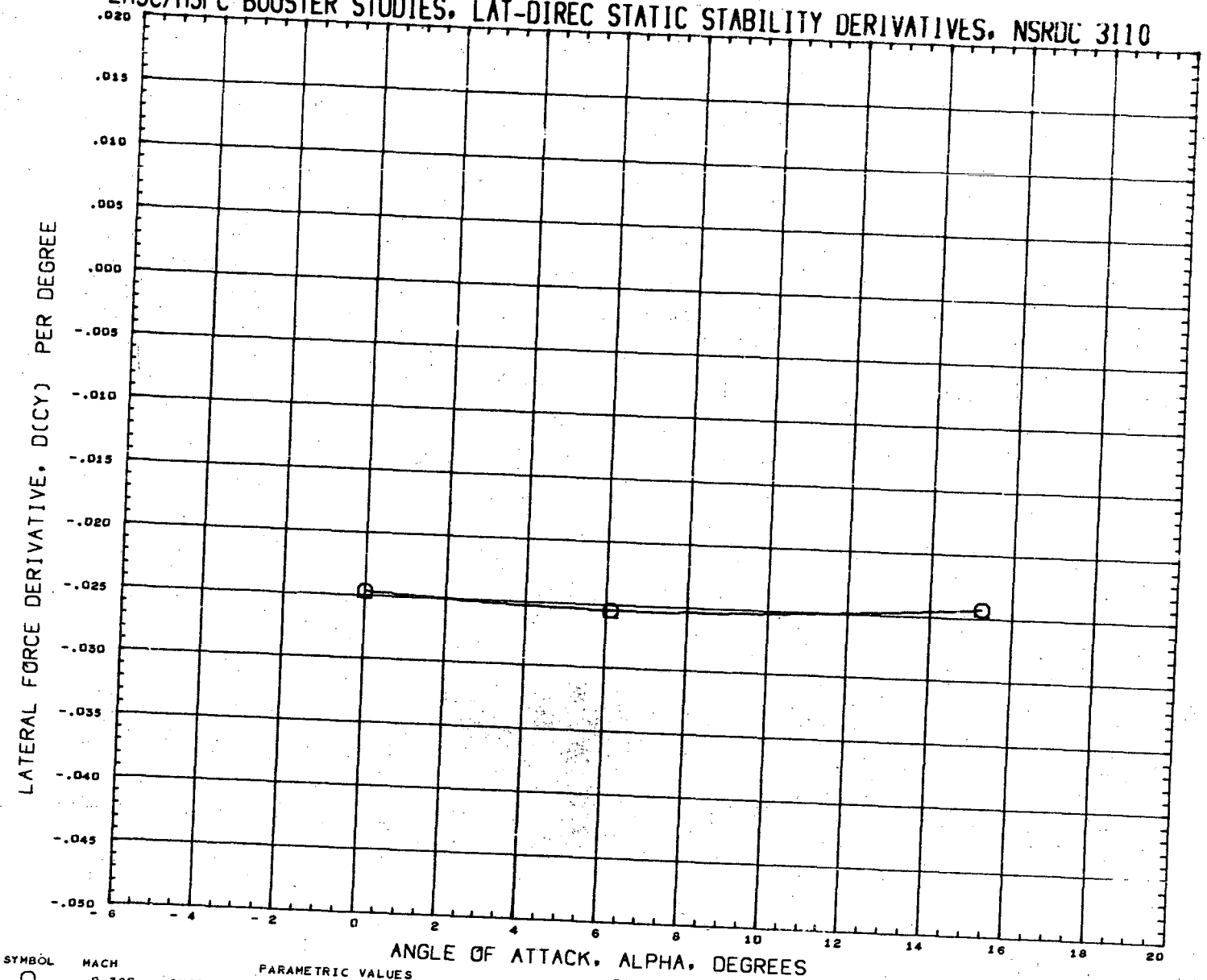
DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2194	0.007	FN2195	6.103
FN2196	15.277		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4560	INCHES
BREF	41.4360	INCHES
XMRF	31.1400	INCHES
YMRF	0.0000	INCHES
ZMRF	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL	MACH
O	0.360

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		

DATA HIST. CODE I

DATA SOURCE

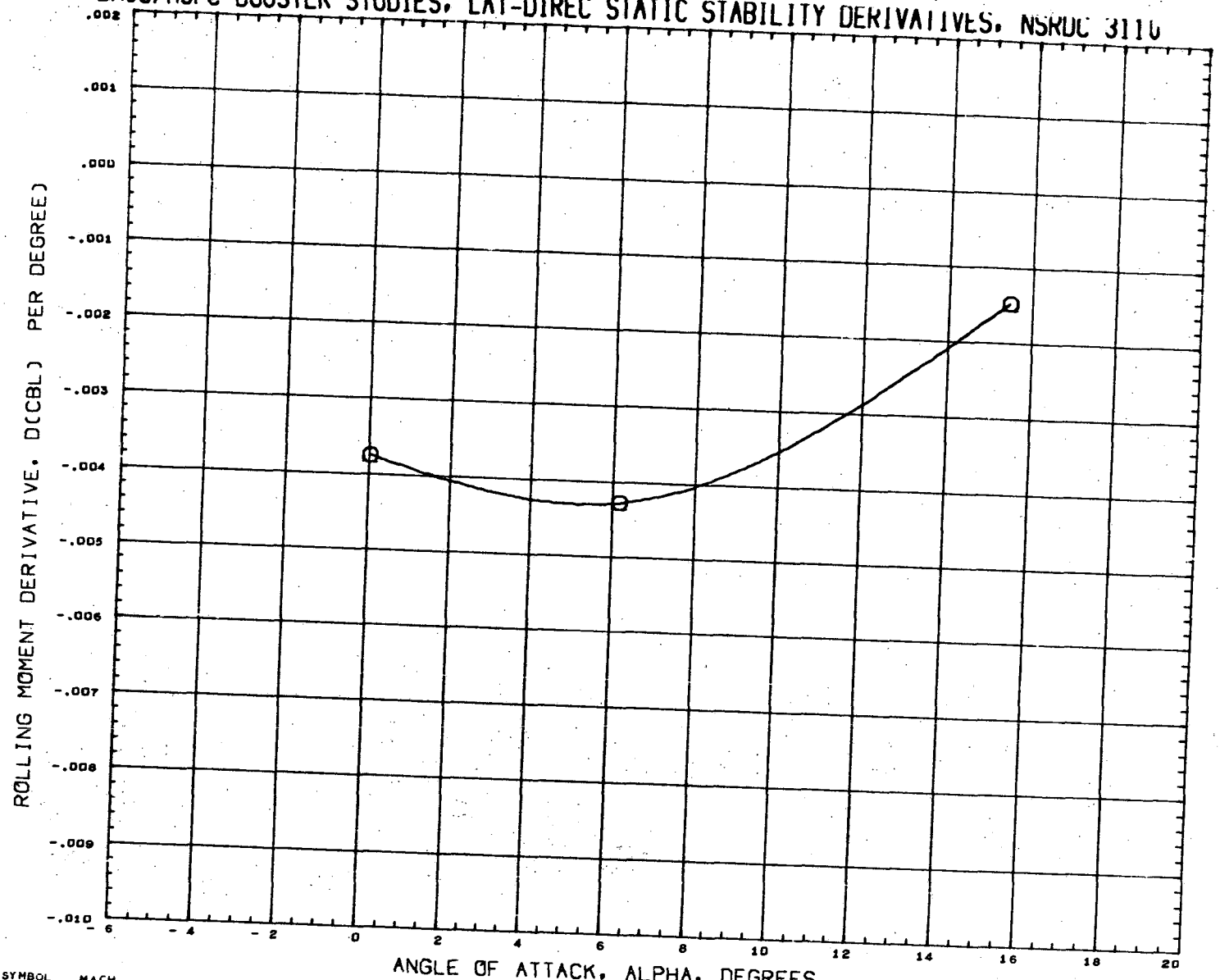
DATASET	ALPHA	DATASET	ALPHA
FN2194	0.007	FN2195	6.103
FN2196	15.277		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W1V2D1 (FN2194) 17 SEP 71 PAGE 2195

LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL O MACH 0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000	DATASET	FN2258
DIHDRL	7.660	AILRON	0.000		FN2260
CANARD	0.000	ELEVTR	0.000		
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				

DATA HIST. CODE I

DATA SOURCE

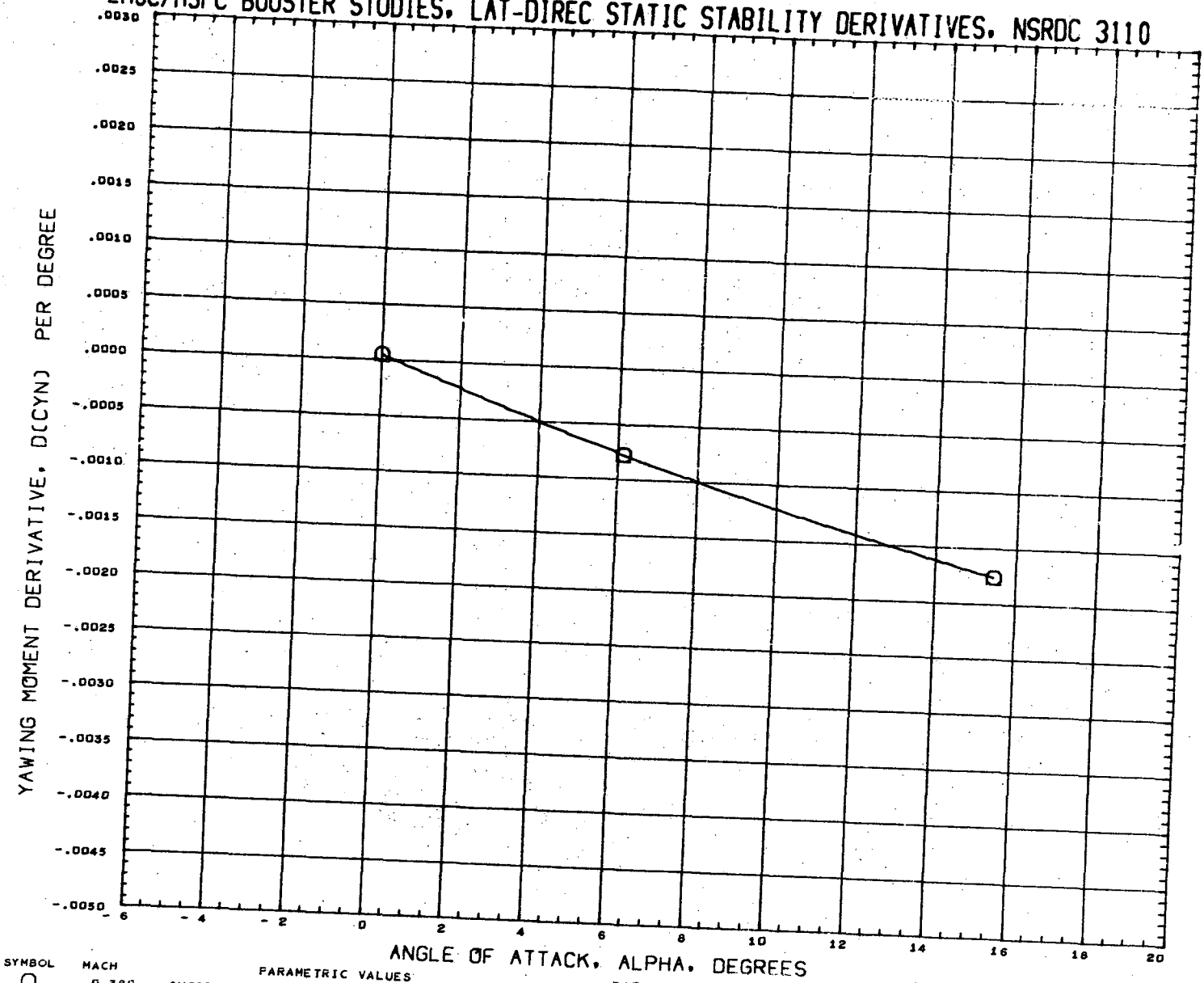
DATASET	ALPHA	DATASET	ALPHA
FN2258	0.026	FN2259	6.158
FN2260	15.476		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W2D1 (FN2258) 17 SEP 71 PAGE 2196

LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL	MACH
O	0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		

DATA HIST. CODE I

DATA SOURCE

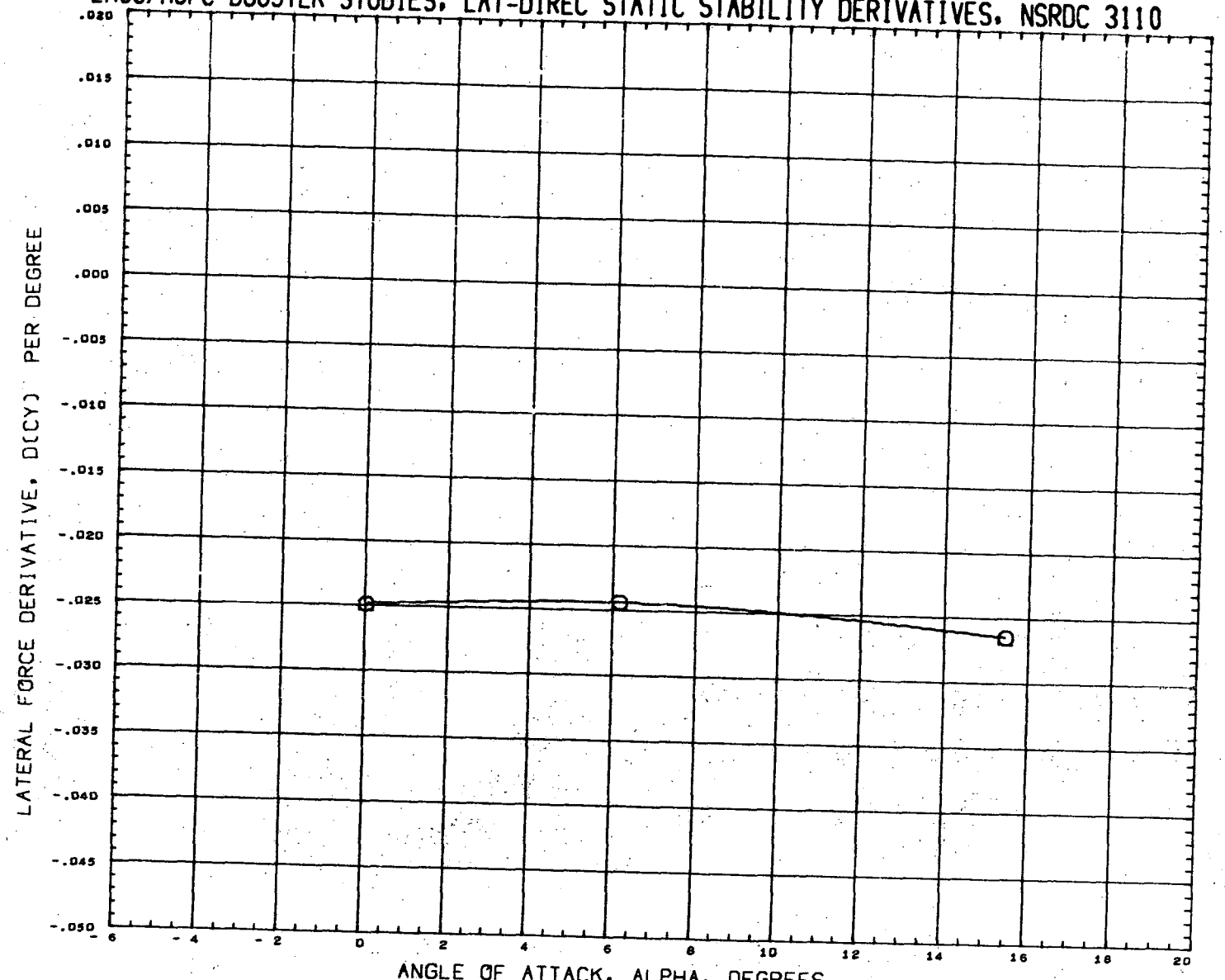
DATASET	ALPHA	DATASET	ALPHA
FN2258	0.026	FN2259	6.158
FN2260	15.476		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110. MSFC/LMSC BOOSTER B1C2F1W2D1 (FN2258) 17 SEP 71 PAGE 2197

LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL	MACH
O	0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		
DATA HIST. CODE	I		

DATA SOURCE

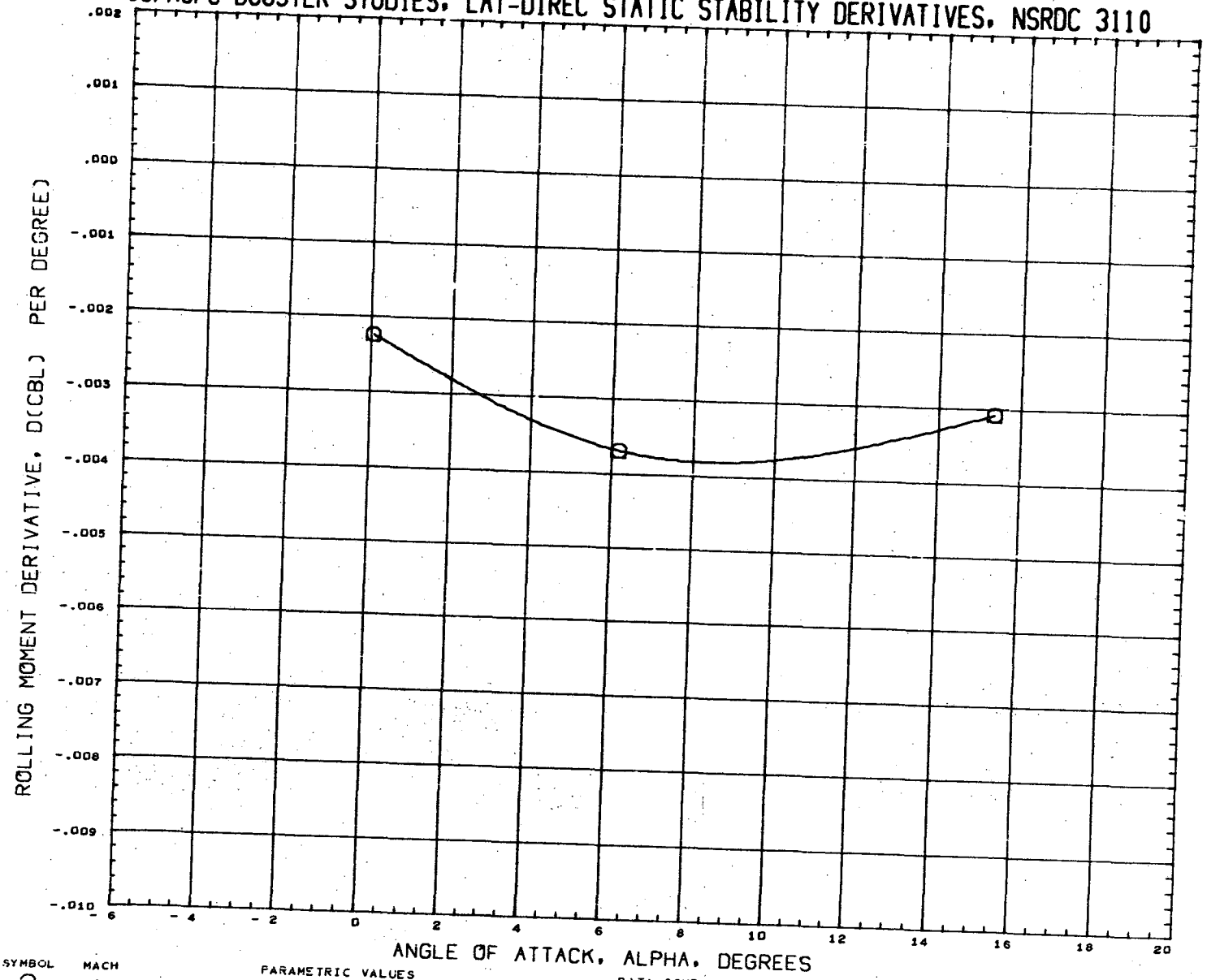
DATASET	ALPHA	DATASET	ALPHA
FN2258	0.026	FN2259	6.158
FN2260	15.476		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110.MSFC/LMSC BOOSTER B1C2F1W2D1 (FN2258) 17 SEP 71

LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL O MACH 0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	2.000
CNDPOS	1.000		

DATA HIST. CODE I

DATA SOURCE

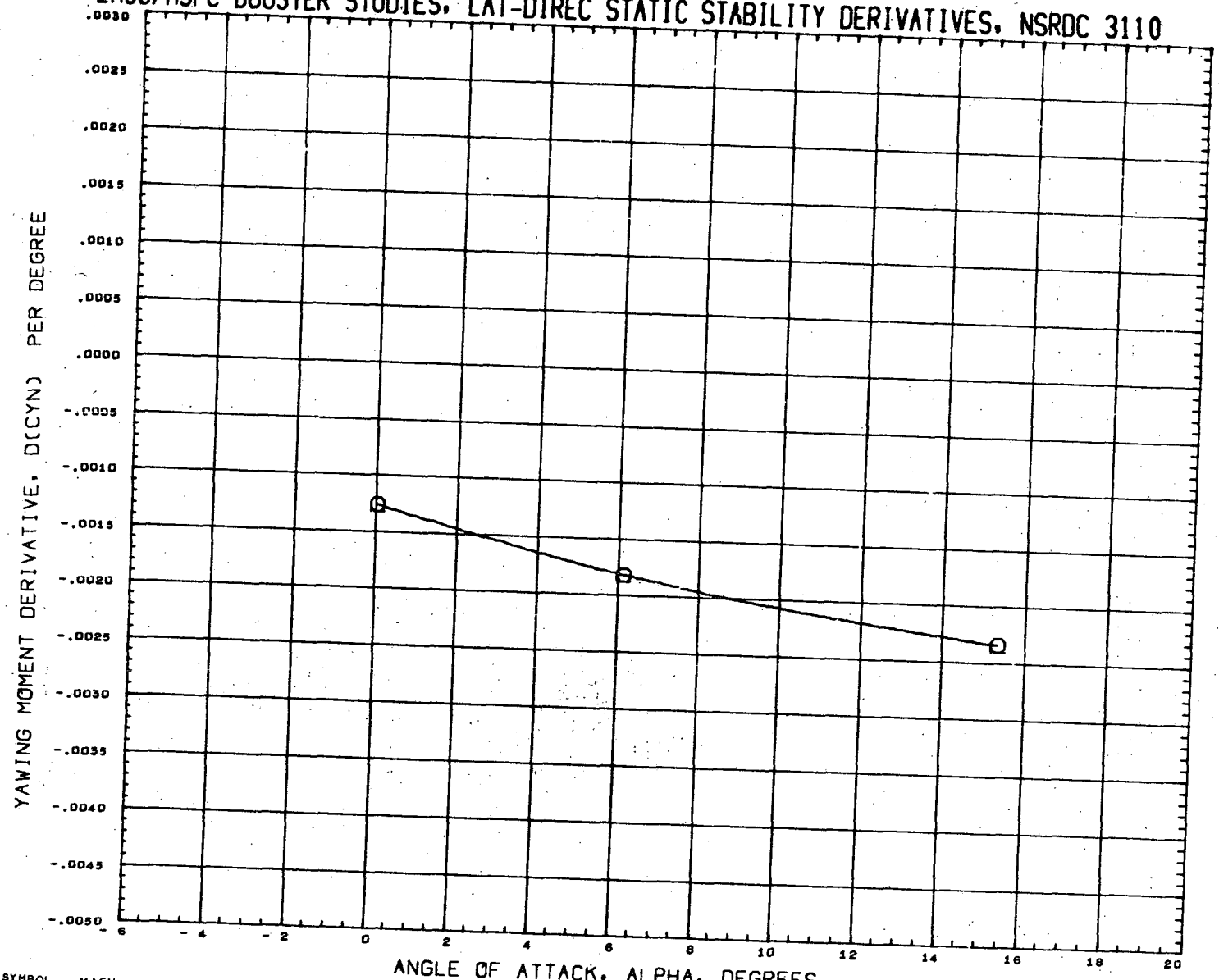
DATASET	ALPHA	DATASET	ALPHA
FN2018	0.050	FN2019	6.162
FN2020	15.362		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F1W1V1 (FN2018) 17 SEP 71 PAGE 2199

LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL	MACH
O	0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000		
DIHDRL	7.660	AILRON	0.000		
CANARD	0.000	ELEVTR	0.000		
RUDDER	0.000	WNGFOS	2.000		
CNDPOS	1.000				

DATA HIST. CODE I

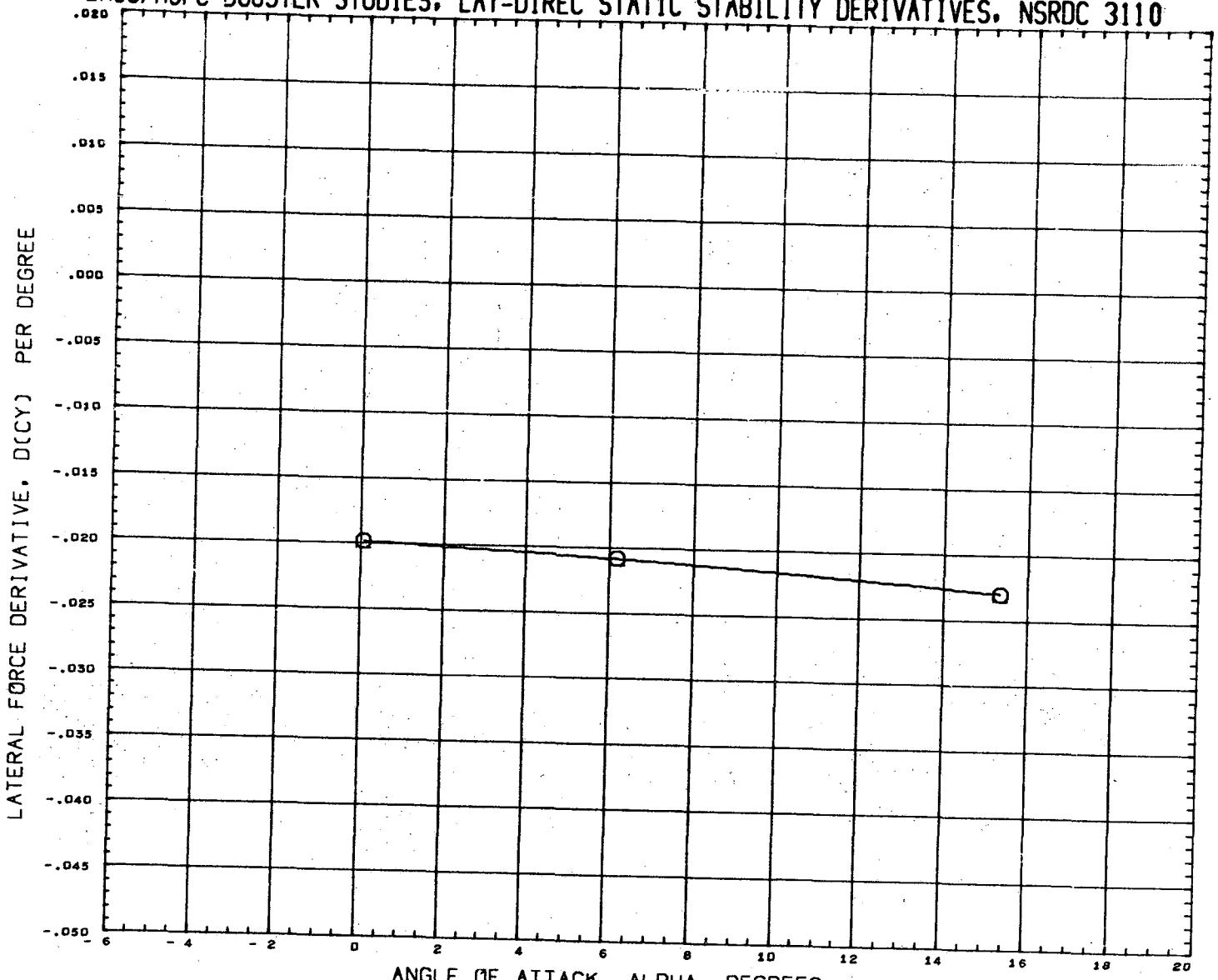
DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2018	0.050	FN2019	6.162
FN2020	15.362		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL	MACH
O	0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	2.000
CNDPOS	1.000		

DATA HIST. CODE I

DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2018	0.050	FN2019	6.162
FN2020	15.362		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

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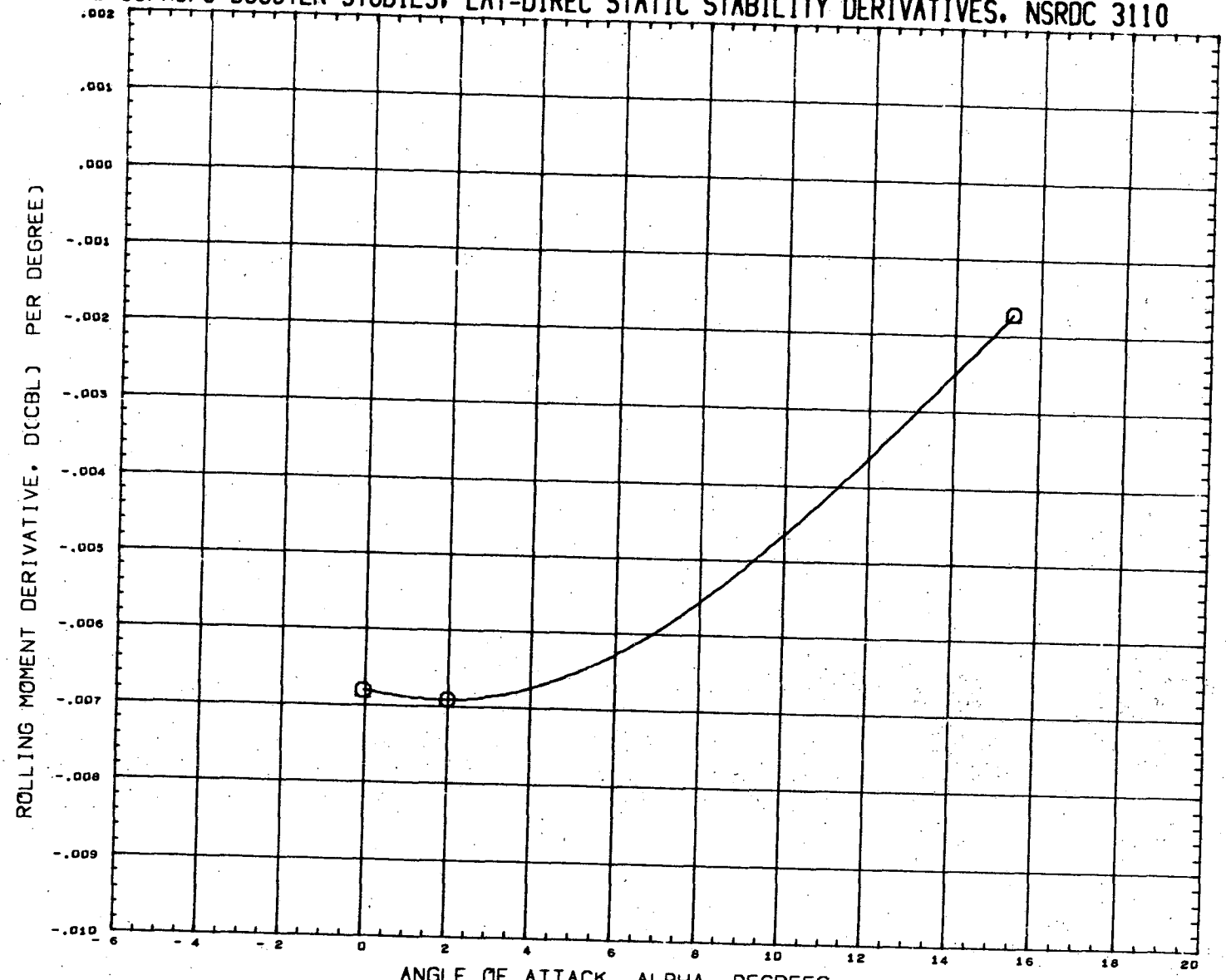
LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL	MACH
O	0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	3.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEYTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		

DATA HIST. CODE I

DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2034	- 0.054	FN2035	1.975
FN2036	15.349		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

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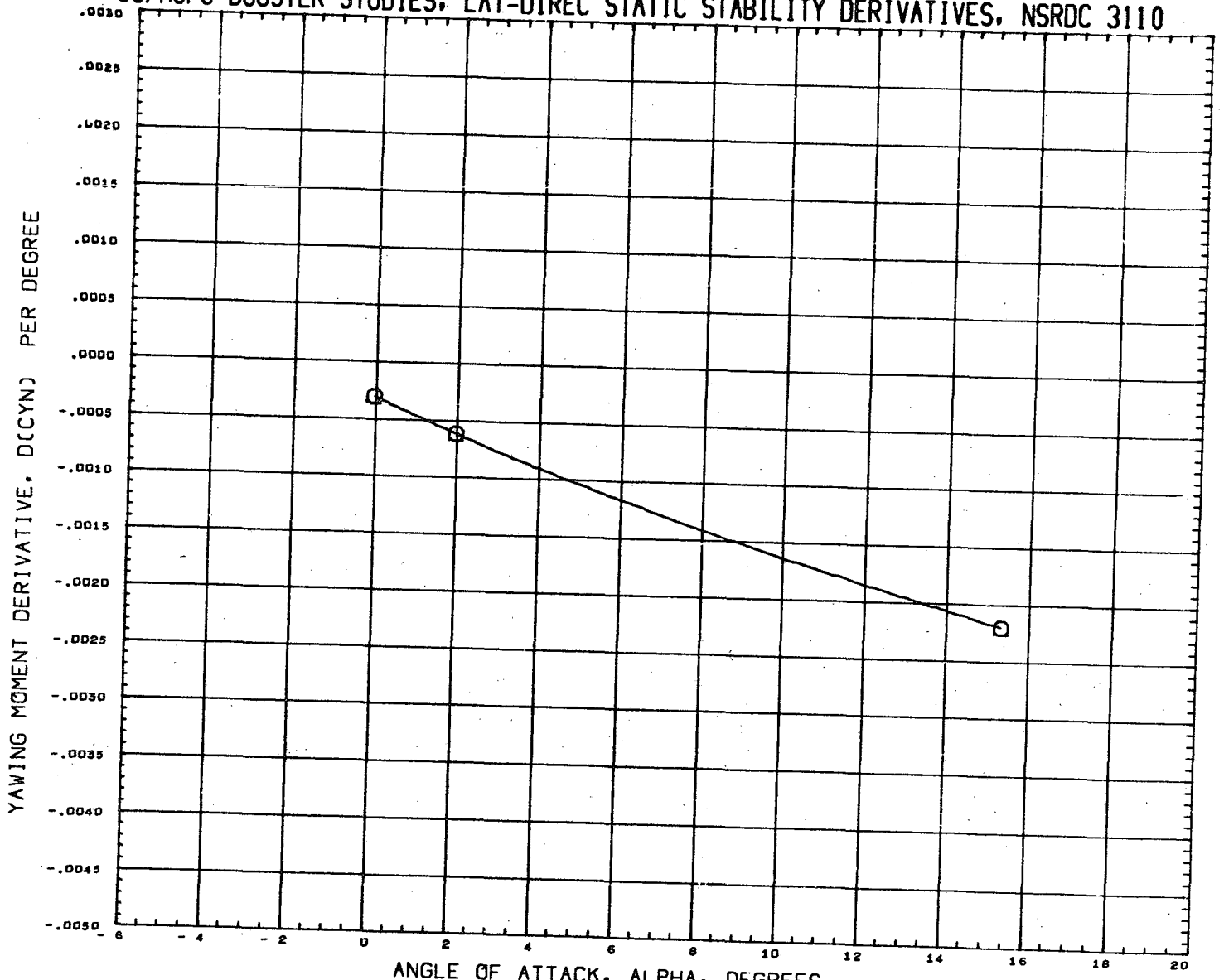
LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL	MACH
O	0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	3.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		
DATA HIST. CODE	I		

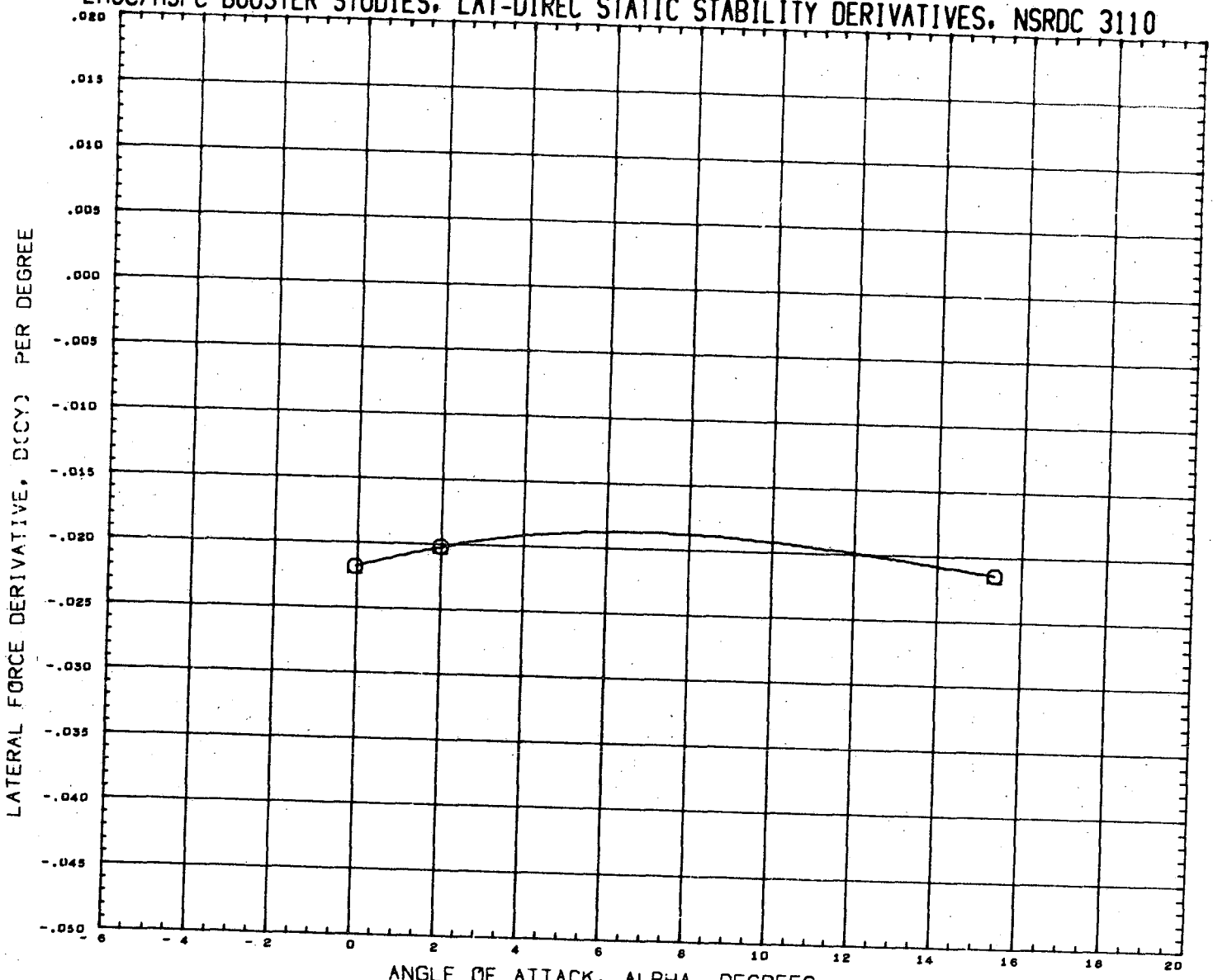
DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2034	- 0.054	FN2035	1.975
FN2036	15.349		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL	MACH
O	0.360

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	3.000
DIHDRL	7.660	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		

DATA MIST. CODE I

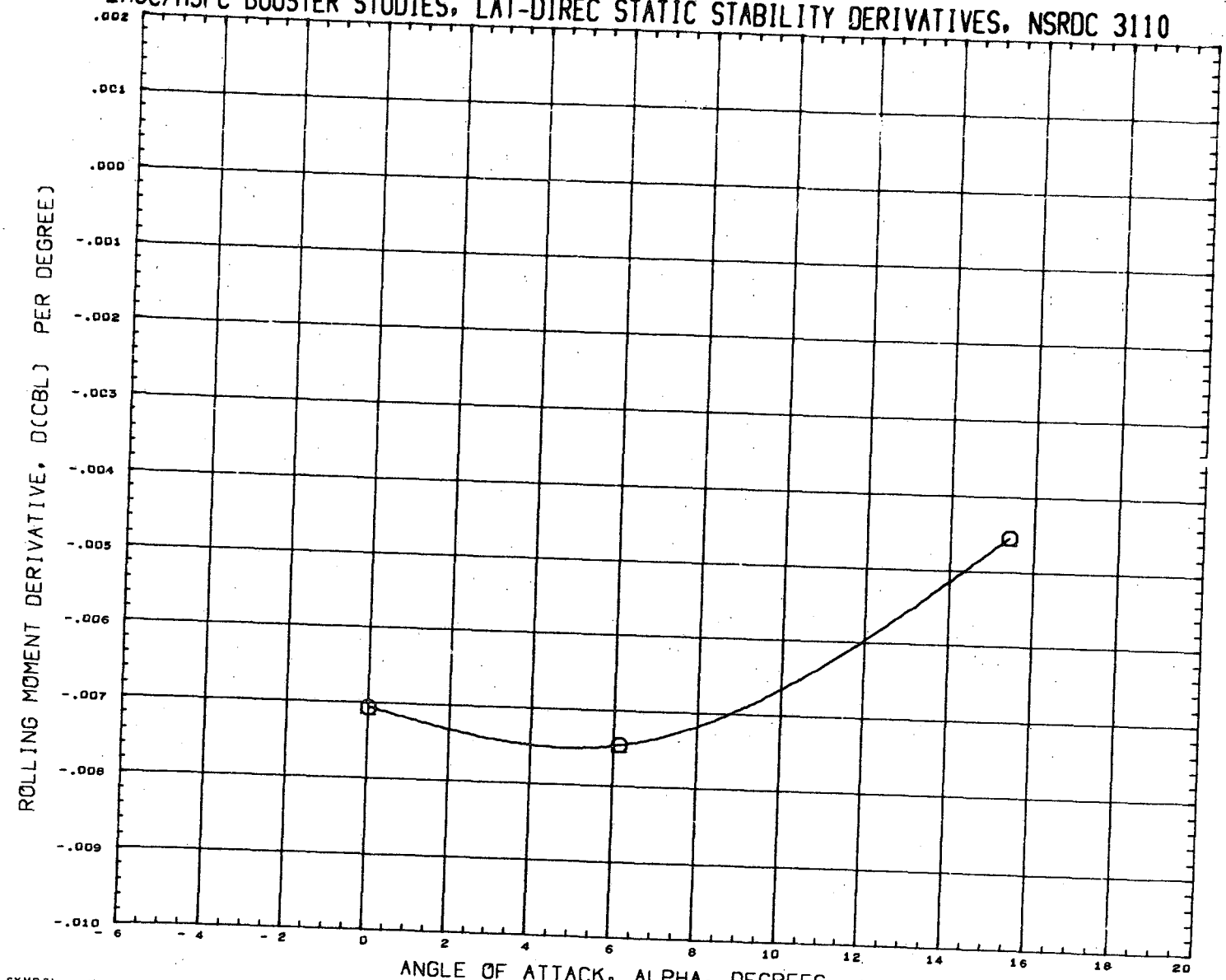
DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2034	- 0.054	FN2035	1.975
FN2036	15.349		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL	MACH
O	0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000		
DIHDRL	15.000	AILRON	0.000		
CANARD	0.000	ELEVTR	0.000		
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				

DATA HIST. CODE I

DATA SOURCE

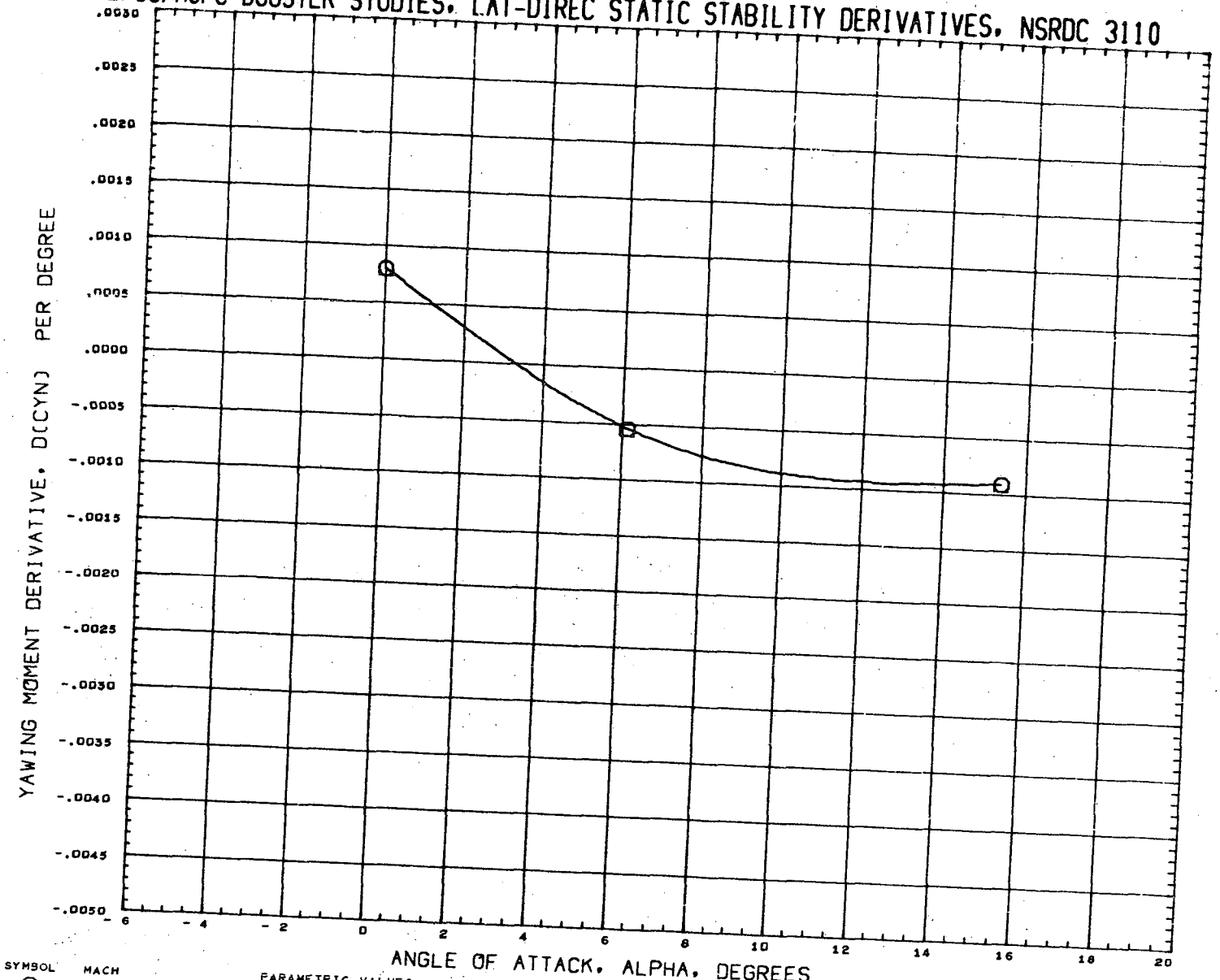
DATASET	ALPHA	DATASET	ALPHA
FN2518	0.013	FN2519	6.138
FN2520	15.421		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F1W1V1 (FN2518) 17 SEP 71 PAGE 2205

LMSC/MSFC BOOSTER STUDIES. LAT-DIREC STATIC STABILITY DERIVATIVES. NSRDC 3110



SYMBOL	MACH
O	0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000
DIHDRL	15.000	AILRON	0.000
CANARD	0.000	ELEVTR	0.000
RUDDER	0.000	WNGPOS	1.000
CNDPOS	1.000		

DATA HIST. CODE I

DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2518	0.013	FN2519	6.138
FN2520	15.421		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

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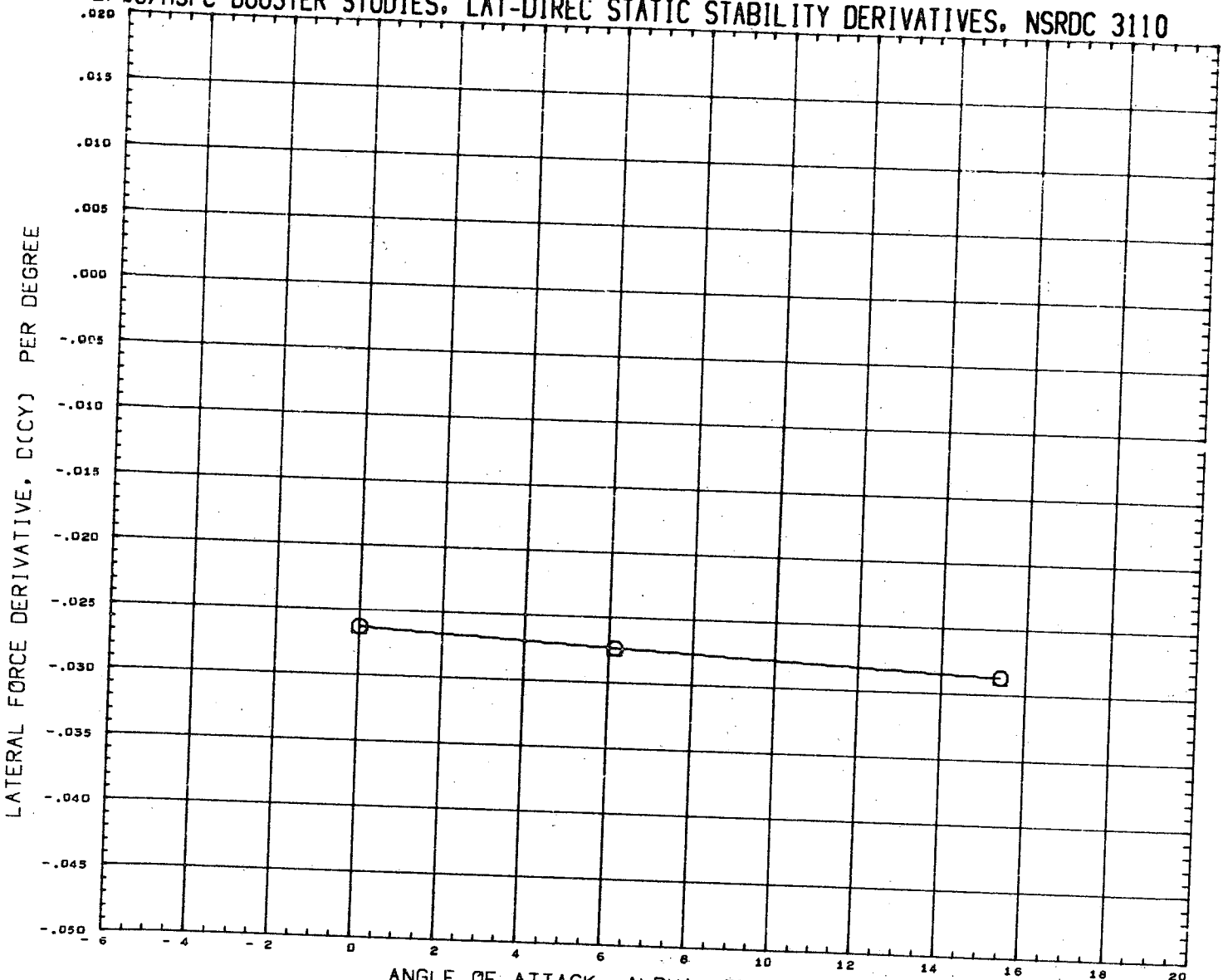
LMSC/MSFC BOOSTER STUDIES, LAT-DIREC STATIC STABILITY DERIVATIVES, NSRDC 3110



SYMBOL: O MACH: 0.380

PARAMETRIC VALUES

INCIDC	3.000	INCIDW	0.000		
DIHDRL	15.000	AILRON	0.000		
CANARD	0.000	ELEVTR	0.000		
RUDDER	0.000	WNGPOS	1.000		
CNDPOS	1.000				

DATA HIST. CODE I

DATA SOURCE

DATASET	ALPHA	DATASET	ALPHA
FN2518	0.013	FN2519	6.138
FN2520	15.421		

REFERENCE INFORMATION

SREF	1.3550	SQ.FT.
LREF	41.4360	INCHES
BREF	41.4360	INCHES
XMRP	31.1400	INCHES
YMRP	0.0000	INCHES
ZMRP	0.2250	INCHES
SCALE	1.5000	PERCNT

NSRDC-3110, MSFC/LMSC BOOSTER B1C2F1W1V1 (FN2518) 17 SEP 71 PAGE 2207